The Journal of the American Medical Association

VOL. XXXVI. CHICAGO, ILLINOIS, FEBRUARY 16, 1901. No. 7.

Original Articles.

THE MAJOR OBSTETRICAL OPERATIONS.

FROM THE STANDPOINT OF THE GENERAL PRACTITIONER WITH A TABULAR REPORT OF TWENTY-THREE CONSECUTIVE SUCCESSFUL CASES.*

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GENERAL PRINCIPLES.

The recent advances in the study of the contracted pelvis, and the possibility of saving fetal life in such cases, by the extension of the major operations to a wider field, have as yet been confined too exclusively to the practice of professed obstetricians, and too little popularized among the great mass of the profession; perhaps because it has been thought by many that the technicalities involved in the detection of contraction are too great for the general practitioner's use, and probably because there is still too much credence for the former erroneous idea of the comparative scarcity of contraction in America. This belief must, however, now be given up. The results of all those who have recently investigated the subject having yielded about the same percentages of contraction, namely, about 11 per cent., if we except the negroes, in whom it rises to nearly 20 per cent. Only about 2 per cent., however, reach the degree of mechanical obstruction which demands operation; but when we consider that in each of these cases the question of whether the woman shall be delivered by one of the ordinary methods or by a cutting operation, must necessarily be raised, even this percentage is surely large enough to make the question one of living importance to every general practitioner.

The operations to be considered in any such cases are forceps and version, the induction of premature labor, craniotomy, the Cesarean section with or without the extirpation of the uterus, and symphysiotomy. The choice between them must always be determined by a consideration of their respective maternal and fetal mortality, under the conditions of the individual case. The short time allotted makes it impossible for me to discuss in detail both the status of all these operations and their application to practice, and as I have recently published[1] a detailed paper on the status of the cutting operations, I propose to limit myself here to a bare statement of the mortalities, unsupported by argument, in order to afford myself room for a full discussion of the application of these results to everyday practice.

As an essential preliminary to any intelligent consideration of these mortalities, we should first, and for each operation, subdivide the cases into favorable and unfavorable classes, putting in the favorable class all those in which at the time of operation the woman is uninfected, not exhausted by long labor, and free from complicating diseases; and per contra, into the unfavorable class, all cases in which the woman is already exhausted by neglected labor, infection, or other intercurrent disease.

FORCEPS AND VERSION FOR CONTRACTED PELVIS.

It will, I think, be conceded by any obstetrician of wide experience, that the use of high forceps and version for contracted pelvis has a small intrinsic maternal mortality, yet we shall find that " is maternal mortality is insignificant or non-existent in the hands of skilful men and when the operations are undertaken with the mother in thoroughly good condition, but that it will not be insignificant in the unfavorable class of cases.

It is generally and somewhat loosely held that the fetal mortality of high forceps and version is not unduly large, but I think any one who will analyze a large series of cases with regard to this point, will be surprised to find how large the fetal mortality is. I have myself found that analyses both of my own experience, and of a considerable number of reported series of cases, have uniformly yielded about the same result, that is, a fetal mortality of not less than 50 per cent., in cases in which high forceps or version was performed on account of contracted pelvis. (We must, of course, exclude cases in which these operations are done for less important mechanical obstacles; in which cases the fetal mortality is naturally much smaller.)

INDUCTION OF PREMATURE LABOR FOR CONTRACTED PELVIS.

In these aseptic days the maternal mortality of the induction of labor is and should remain exceedingly small, but in this class of inductions the reported fetal mortality is far from small, being about 50 per cent.; a statistical result which is, moreover, supported by the opinion expressed in the more recent text-books.

CRANIOTOMY.

Since craniotomy to the living child is practically never performed until after the failure of determined attempts at extraction by high forceps and version, its maternal mortality is necessarily a little higher than where these operations succeed. Its fetal mortality is, of course, 100 per cent.

THE CLASSICAL CESAREAN SECTION.

Until very recently, it has been generally held that the maternal mortality of the Cesarean section was still not less than 25 per cent., and if all the reported cases are considered together this opinion is probably a true one, but a division of the cases into the favorable and unfavorable classes, defined above, yields surprisingly different results. Thus an analysis which I made a year ago of 150 reported cases, 15 of my own and the remainder

* Read before the Obstetrical Section of the New York State Medical Association.

1. Obstetrics, January, 1900.

2. Estimating an unduly prolonged labor at the arbitrary limit of twenty-four hours.

from foreign sources, shows that there were 89 cases in the favorable, and 61 in the unfavorable class.[2] Among the 89 favorable cases there was no maternal mortality, while the mortality of the unfavorable cases reached the prohibitive figure of 33.3 per cent.

The fetal mortality of the Cesarean section is, of course, the smallest mortality known, amounting to nothing in the favorable class of cases.

PORRO'S OPERATION.

This extirpation of the pregnant uterus has been almost invariably confined to the unfavorable class of cases. There is perhaps not yet enough material for estimating its maternal mortality when done early in labor and in selected cases. It is probably but slightly greater than that of the uncomplicated section. Its mortality in the unfavorable cases is somewhat lower than that of the Sänger section, but reaches about 30 per cent. Its fetal mortality is that of the Cesarean section, that is, it is never fatal to a child which is in good condition at the time the operation is undertaken.

SYMPHYSIOTOMY.

When the reported cases of symphysiotomy are separated into the favorable and unfavorable classes, the operation is found to have a somewhat larger maternal mortality than the section in the first set of cases, those in which women were in good condition, the small mortality which exists being due to an occasional improper selection of cases, that is, to the performance of symphysiotomy in pelves of too high a degree of contraction to admit of easy extraction after it had been performed. Its fetal mortality is practically confined to the same mistaken cases; but, though this is a mortality of mistake, the fact that it has been frequently made by men of world-wide reputation makes it necessary to consider it. In contrasting symphysiotomy with the classical Cesarean section in the favorable class of cases, it must, moreover, be remembered that even if it attains an equally low maternal mortality, its morbidity is considerably higher than that of Cesarean section, that is, serious injuries to the soft parts occur not infrequently, and loss of locomotive ability from permanent mobility of the pelvic bones is not unknown. In the unfavorable class of cases, however, the maternal and fetal mortality of symphysiotomy both compare favorably with those of any other operation, and, in my opinion, it here finds its chief indication. It is unattended by shock; it does not open the genital canal, and can therefore be performed in infected cases; it makes the subsequent extraction by forceps or version easy instead of difficult.

CONCLUSIONS.

The conclusions to which I have been forced by my study of the subject, which have since been supported by the results of every reported case that has come under my observation, and which have led me to an unbroken success in dealing with all the major cases that I have seen since I finally formulated them—23 cases in four years—are as follows:

1. When the conditions are such that the child can be delivered with anything like reasonable ease by forceps or version, one of these operations is preferable to any cutting operation.

2. When the mechanical relations would render forceps or version unusually difficult, forcible and prolonged, and when the mother is in the favorable class, the equally low maternal mortality and the far lower fetal mortality of the Cesarean section render it the operation of choice.

3. When the mechanical conditions make the intrapelvic delivery of an intact child at term impossible or unduly difficult, the great superiority of the Cesarean section over the induction of premature labor in fetal mortality, and its extremely low maternal mortality render it again the preferable operation.

4. When the ordinary operations fail and the woman is in the unfavorable class, symphysiotomy is the operation of choice, and may be expected to lead to a favorable result for both mother and child in the great majority of cases, provided always that the degree of mechanical difficulty permits of its application.

5. When in the unfavorable class of cases, the degree of relative disproportion between head and pelvis is too great to admit of a safe symphysiotomy, craniotomy to the living child should be unhesitatingly chosen, since the maternal mortaliy of either form of the section is so enormous, and because I can not doubt that the life of the potential mother of many children is of more value than that of any unborn fetus.

APPLICATION TO PRACTICE.

If these principles be true, it follows that there are but few, if any, cases of uncomplicated mechanical obstruction in which a happy outcome for both mother and child is not easily within the power of ideally prompt and intelligent medical care, if applied at the beginning of labor. I believe this to be a fact and I think that this happy state of affairs is sufficiently possible of accomplishment to encourage us in every effort toward its attainment. The method which is commonly laid down as a necessity to this end is the routine measurement of every case at the time it first comes under the practitioner's care. I am far from underestimating the value of routine pelvimetry, and hope to see the day when it will be a part of every obstetric examination, but I believe that there is no use in disguising from ourselves the fact that it is not now, and for the present is not likely to be, generally practiced; if only from the fact that the attainment of an accurate conception of the mechanical possibilities of a given pelvis by mensuration is not an easy matter to any one, and that, moreover, the active general practitioner of to-day has not been educated in it, and can hardly be expected to perfect himself in this particular. The popularization of pelvimetry must be expected from the graduation of students who have been carefully taught it during their course in the medical schools. Valuable as mensuration is, moreover, it is fortunately not essential to the attainment of very fair results in mechanically obstructed labor. Every day of increasing experience makes it more certain that the supreme test of the adaptation between head and pelvis is the test of actual labor, and that the all-important thing is the clinical recognition of a mechanical obstruction early in the course of labor. The variations in the size and hardness of the fetal head are so great that there are, in my opinion, few cases of contracted pelvis in which any one is justified in performing a major operation without applying to the case the supreme test of an actual labor, or the history of past labors; and this clinical test is easily within reach of the general practitioner if he will conceive the case properly. Let us then discuss his duty in the course of his care of pregnancy and labor, from the standpoint of the cruder methods which are possible to everyone.

The importance which attaches to the actual clinical test necessarily places primiparæ and multiparæ in

widely different clinical classes, and it is natural to discuss the primiparæ first.

PRIMIPARAE.

I would, then, advise the general practitioner that when a primipara comes under his care during the course of pregnancy, he should always include the possibility of marked mechanical obstacles as among the contingencies to be considered in his mental estimate of the case. If the woman be especially small, if she has a history of early caries, either of the hip or spine, or if any other symptoms point to a possible dystocia, he should take her to an expert for the estimation of the size of the pelvis, in consultation, early in pregnancy, precisely as he would treat any other certain grave surgical complication in his practice. Even if no such threatening symptoms exist, he should, preferably a few weeks before labor, and at all events at his first visit in labor, notice whether or not the head is unusually high. This, though not ideal, is, I think, the best test which we can expect at present to have applied to general practice in the case of primiparæ; it is, moreover, a fairly good one. If the head is, at the beginning of labor, well crowded down into the brim it will very rarely if ever happen that the case is beyond a possible delivery by forceps, and if such a delivery results fatally to the child, the question of choice of operations can be taken up at the next pregnancy. On the other hand, if in a primipara with the rigid abdominal and uterine walls which belong to her condition, the head is at the beginning of labor high above the brim, the question of serious relative disproportion between the head and pelvis is always prominent. The point which must now be remembered is that the chance for a successful Cesarean section is limited to the early part of labor and that the choice must be made then and can not be deferred to a later time. What the practitioner should do in such a case must depend on varying factors, such, for instance, as his methods of practice, his relation to the individual patient, and the locality in which his practice is situated. He may choose between an immediate and careful measurement of the pelvis, externally and internally, himself, if he feels competent for it, or an immediate consultation with an expert, not necessarily on the subject of an immediate delivery, but on the question of whether there is a sufficiency of room; and this consultation will seldom be objected to by the family if it is put before them in this way. If a contraction of the pelvis is found, preparations for a section should be made on the chance that its performance may be necessary. If then the dilatation of the os progresses with fair rapidity and without the appearance of any exhaustion of the patient, nothing is done until toward the termination of the first stage. If the first stage is tedious and exhausting, the patient is etherized while still in good condition and the os gently dilated manually. The hand is then passed into the pelvis, under anesthesia, of course, and made to palpate and measure it with the greatest care; it is next passed up to palpate the head, both to ascertain its size and the relation which its greatest diameter bears to the pelvic brim when it is strongly crowded down into the pelvis by a suprapubic hand. If this test is inconclusive, the forceps are applied to the sides of the head with the greatest care and a few gentle tractions made in order to determine the amount of resistance which is to be expected, and to study the application of the individual head to the individual pelvis by the introduction of the fingers alongside the forceps during the tractions. At the same time the fetal heart is carefully watched to judge of the effect of the tractions on the child. It is manifest that this method of studying the case requires an extended obstetrical experience for a due appreciation of its results, and I believe that in case of doubt the decision should be given in favor of the lesser operation, in primiparæ at all events, since in the present state of our knowledge it is better that we should risk losing one child than perform an unnecessary Cesarean section; but with due care and caution and in sufficiently skilled hands, I believe that this test will yield nearly certain results, and that the doubtful cases will consequently be rare. I believe that the adoption of this simple rule—that an unusually high or inaccessible position of the head at the beginning of labor should be regarded as ground for a consultation—will lead to greatly improved results.

In the present condition of medical practice we can not doubt that the children of primiparæ will occasionally be lost, who might have been saved by an early resort to a cutting operation, and that symphysiotomy will be done in other cases where the preferable Cesarean section might have been selected had the gravity of the case recognized earlier; but when the primipara has become a multipara, the case is much more simple.

MULTIPARAE.

Once the general practitioner realizes what the public is already beginning to know, that the loss of a child in labor from mechanical obstacle is a loss which might probably have been avoided; once he recognizes what will, in my opinion, before many years be recognized by the profession far and wide, that the mortality and morbidity of the major operations done at the beginning of labor are no greater and probably less than those of violent and prolonged forceps extraction, very few children of multiparæ will owe their death to any mechanical cause. The rule which will save them is again a simple one. When a woman has once lost a child in labor from mechanical obstacle, that is, from difficult delivery by forceps or version, the question of a major operation at term should always be taken up during the next pregnancy of that woman, that is, a consultation should be held, at latest a few weeks before delivery. The pelvis will then be measured and the relative size of the pelvis and the individual head will be estimated by the hand. If distinct disproportion already exists, the case may conceivably be treated by Cesarean section at the beginning of labor, or at a date set just before it. In a larger number of cases, the estimation of relative size will be repeated at term and the woman will be allowed to go through the earlier hours of labor, but with every preparation for the performance of a Cesarean section already made, and with an operator at hand, so that in the event of another failure of the powers of nature the favorable moment can be seized and another fetal death in labor avoided.

Is not all this a simple and rational application of our recent advances to ordinary general practice? It may be objected that I have insisted too much on the employment of an expert wherever the question of relative disproportion is a prominent one. I would reply that every great advance works harm by the overenthusiasm and rashness of the ill-prepared. That the decision in favor of or against a major operation in a given case is, in my opinion, in most cases, a very delicate and difficult one; one which should be submitted to a man with a professed proficiency in the subject. Obstetrics is rapidly reaching a position in which its

No.	Name.	Birthplace	Patient of—	Age.	Married or Single.	Number of Confinement.	Previous Labors.	Date.	Pelvis.	True Conjugate.	First Seen When	Weight of Child.	Operated upon During Labor.	Presentation and Position.
1	R. R.[1]	Massachusetts	Boston Lying-in Hospital	38	Single	1	None	July 26, 1896	Pelvic Nana	7 cm	6 months	3 lb. 10 ozs	During labor	Transvers. not given
2	. P.	Massachusetts	" " "	32	Married	3	First, 1896; forceps—stillborn. Second, 1897; induction at six months—child died.	Sept. 10, 1896	Justo-minor	9 cm	6 months	8 lb. 1 oz	Elected date	Vertex, not given.
3	M. R.	Ireland	" " "	26	"	4	First, August, 1892; forceps—child alive. Second, January, 1893; forceps—child lived ten minutes. Third, April, 1896; prolapsed cord—stillborn.	Aug. 6, 1897	Justo-minor.	9 cm	4 months	8 lb. 2 ozs	During labor	Vertex O. L. A.
4	K. R.	Massachusetts	" " "	28	"	3	First, 1894; forceps—child born dead. Second, 1895; forceps—child born dead.	Sept. 30, 1897	Justo-minor.	8.5 cm	4.5 mos	7 lb. 4 ozs	" "	" "
5	L. S.	Massachusetts	" " "	23	"	2	First, November, 1896; spontaneous at seven months child lived eight months.	Jan. 16, 1898	Oblique Kyphotic	8 cm	At term	7 lb. 4 ozs.	Elected date	" "
6	Mrs. W.	Massachusetts	Referred by Dr E. T. Galligan	37	"	2	First, March, 1898; forceps (by E. R.)—dangerously hard pulling; child 7½ pounds; badly marked but living.	Mar. 24, 1898	Justo-minor.	8.5 cm	2 months	8 lb.	During labor	" "
7	D. F.	Germany	Boston Lying-in Hospital	24	Widow	2	First, 1896; high forceps—child lost in labor	April 11, 1898	Generally contracted, flat.	8.5 cm	8.5 mos	8 lb, 4 ozs.	" "	" "
8	M McH	Ireland	" " "	26	Married	2	First, May, 1897; high forceps.	July 17, 1898	Justo-minor.	8 cm	At term	8 lb.	" "	Not given.
9	V. McM	Massachusetts	" " "	24	Single	1	None	Mar. 22, 1899	Generally contracted, flat.	7.5 cm.	At term	6 lb, 8 ozs	" "	Vertex O. L. A.
10	F. S.	Russia	" " "	27	Married	5	First Feb. 7, 1887; craniotomy. Second, April, 1888; Induced labor eight months—child died. Third, January, 1890; premature delivery—child died. Fourth; craniotomy; version; rupture of uterus; peritonitis.	April 2, 1899	Justo-minor.	7.5 cm.	5 months	8 lb, 9 ozs	" "	S. L. A. breech
11	Mrs. W	Massachusetts	Seen with Drs. C. W. Townsend and W. A. Putnam	28	"	2	First, Aug. 18, 1896; craniotomy	June 5, 1899	Justo-minor.	Not taken[2]	At term	8 lb, 8 ozs	" "	Not noted.
12	A. P.	Massachusetts	Seen with Dr. O. E. Johnson.	38	"	1	None	July 18, 1899	Justo-minor.	8 cm.	At term	7 lb.	" "	O. L. A.
13	H. B. K	Massachusetts	Seen with Dr. J. P. Torrey.	29	"	1	None	Oct. 18, 1899	Justo-minor.	8.5 cm.	5 months	10 lb.	" "	Not noted.
14	K. R.	Massachusetts	Boston Lying-in Hospital	30	"	4	Third, 1879; Cesarean section. (Case 4 above).	Dec. 27, 1899	Justo-minor.	8.5 cm	6 months	7 lb, 8 oz.	Elected date	Vertex O. L. A.
15	K. D	Ireland	" " "	38	"	8	Three miscarriages; four full-term pregnancies (1889, 1891, 1892, 1896), all still-born.	July 9, 1898	Generally contracted, flat.	8.5 cm.	In labor	8 lb, 6 ozs	During labor	Vertex O. D. P.
16	M. M	Ireland	" " "	35	"	4	First, February, 1884; forceps—child living. Second, 1886; Still-born. Third, 1897; miscarriage (3 mos.).	July 25, 1898		Meas. not recorded.	In labor	9 lb, 8 ozs	" "	" "
17	M. M	Ireland	" " "	35	"	5	First, February, 1884; forceps living. Second, 1896; forceps—living. Third, February, 1897; miscarriage at three months. Fourth, July, 1898; symphysiotomy (Case 16 above); high forceps.	June 15, 1900	Not recorded.	Not recorded.	In labor	8 lb, 12 ozs	" "	Vertex.
18	L. L.	Italy	" " "	41	"	9	All operative; high forceps and version	Jan. 11, 1900	Generally contracted.	8.5 in	In labor	8 lb	" "	Vertex O. D. P.
19	E. R.	Nova Scotia	" " "	25	"	1	None	June 18, 1900	Generally contracted.	8.5 cm.	In labor	7 lb, 11 ozs.	" "	" "
20	L. S.[3]	Boston	" " "	24	"	3	First, November, 1896; premature at seven months. Second, January, 1898. Cesarean section (B. L. H.) (C. R.) (Case 5, above)—child living.	June 20, 1900	Oblique Kyphotic	8.5 cm.	At term	6 lb, 2 oz.	" "	Vertex.
21	J. W.[4]	Boston	" " "	26	"	1	None	Sept. 10, 1900	Oblique.		At term	8 lb.	" "	Vertex O. L. A.
22	A. C.	Ireland	" " "	24	Single	1	None	Sept. 28, 1900	Generally contracted, flat.	7.5 cm.	At term	6 lb, 5 ozs	" "	Vertex O. D. P.

1 An idiotic Cretin dwarf, whose development was both mentally and physically about that of a 3-year-old child.

2 External measurements all small. Previous labor had been a craniotomy by an expert obstetrician, and this labor was seen with the same gentleman, who had examined and found the head wholly disproportioned to the pelvis. He was prevented by the head from measuring the conjugate. I made no vaginal examination. The child proved much larger than the former one.

3 No. 20 had hip-disease at 14, with shortening of right leg and fixation.

4 No. 21 had hip-disease when a child. Left leg adducted and hip-joint anchylosed.

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No.	Operation.	Length of Labor Before Operation.	Previous Operative Measures.	Abdominal Sutures.	Uterine Sutures.	Ergot.	Cervical Drain.	Length of Operation.	Convalescence.	Sat up. Day.	Nursed.	Child.	Result.	
													Mother.	Child.
1	Cesarean Section	Uncertain, os size of 10-cent piece.	None	Through and through silk worm gut.	Interrupted; braided silk in two layers.	Subcutaneously	Gauze	29 min, 15 sec	Interrupted by sloughing about subcutaneous punctures.	29th	No	Male	Well	Died; hereditary weakness.
2	" "	None	None	" " "	Interrupted; braided silk in two layers.	" "	"	42 5 min.	Nervous and apprehensive; pain in chest; otherwise normal.	23d	Yes	Female	"	Well
3	" "	19 hours	Tentative traction with high forceps.	" " "	Interrupted; medium twisted silk with fine silk seroserous coaptation stitches.	" " twice.	None	31 min.	Normal	27th	"	Male	"	"
4	" "	11 hours	High forceps failed	" " "	Interrupted; braided silk in two layers.	Subcutaneously.	"	45 min.	Severe after pains; some distention and flatulence till cathartic on 2d day.	24th	"	"	"	"
5	" "	None	None	" " "	Interrupted twisted silk, with fine silk seroserous coaptation stitches.	" " twice.	"	40 min.	Uneventful	21st	"	"	"	"
6	" "	5 hours	Tentative forceps	" " "	Interrupted medium twisted silk with fine silk seroserous coaptation stitches.	Subcutaneously.	"	Not taken	Normal	22d	"	"	"	"
7	" "	6 hours and 40 minutes.	None	" " "	Interrupted medium twisted silk with fine silk seroserous coaptation stitches.	" "	"	28 min.	Normal except for troublesome cough present before operation.	29th	"	"	"	"
8	" "	3 hours	None	" " "	Interrupted twisted silk with fine silk seroserous coaptation stitches.	" "	"	26 min.	Normal	20th	"	Female	"	"
9	" "	14 hours and 35 minutes.	None	" " "	No. 8 twisted silk down to endometrium; running sutures of fine twisted silk for uterine peritoneum.	" "	"	35 min. 35 sec.	Slight pyrexia. No cause developed.	29th	"	"	"	"
10	" "	7 hours	None	" " "	Through and through silk with fine seroserous coaptation stitches.	" "	"	44 min.	Normal	23d	"	Male	"	"
11	" "	30 hours mild, 6 hours good	None	" " "	Silvered silk	" "	"	Not taken	" "	30th	No	Female	"	"
12	" "	18 hours	Tentative forceps	" " "	" "	" "	"	" "	Normal. Some tympanites	Abo't 18th	Yes	" "	"	"
13	" "	2 hours	" "	" " "	" "	" "	"	" "	Normal	21st	"	Male	"	"
14	" "	None	None	" " "	Twisted silk	" "	"	40 min.	" "	23d	"	Female	"	"
15	Symphysiotomy	9 hours	Manual dilatation and prolonged high forceps before entrance.	" " "	Not given	By mouth		Not taken	Obstetric sepsis. Wound normal.		No	" "	"	Died of fracture of skull
16	" "	20 hours	High forceps failed	" " "	Not given	" "	Unstated	Not taken	Normal		Yes	" "	"	Well
17	" "	Probably in second stage	None	" " "	Not given	" "	None	" "	" "	28th	"	" "	"	"
18	Cesarean section	None	None	" " "	Interrupted fine twisted silk.	Subcutaneously.	None	27 min.	" "	25th	"	Male	"	"
19	" "	1 hour and 30 minutes.	None	" " "	Interrupted fine silk	" "	"	29 min.	Phlebitis in left leg and slight attack of grippe	70th	"	"	"	"
20	" "	None	None	" " "	Interrupted fine twisted silk.	" "	"	31 min.	Normal	26th	"	Female	"	"
21	" "	hours	None	" " "	Interrupted fine silk	" "	"	33 min.	Normal	25th	"	Male	Well	Well
22	" "	19 hours and 30 minutes.	None	" " "	Interrupted fine twisted silk.	" "	"	39 min.	Difficult; severe pain, much distention until catharsis on 2d day; some pyrexia; mild delusion at times.	21st	"	Female	Well	

best exponents are able to exhibit as definite results as are obtained in other branches of modern surgery, and I believe that the profession will before many years be compelled by the public to feel its obstetrical responsibilities with the same seriousness which has long been accorded to surgery. Once the public and the general practitioner feel that almost every fetal death from mechanical obstacle must be charged to the want of exceptional skill on the part of the attendant, we shall have far fewer deaths in labor. In every large city the men who are ready to consider this question are plentiful, and when cases of the sort occur at a distance from such a center they must be settled by the best man accessible.

I wish finally to repeat my firm belief that in all cases of doubt we should be guided by the general proposition that a manufactory is always of greater value than any single sample of its products, and that the potential mother of many children is always of more value than a single child; though I believe that in well-handled cases the interests of mother and child are to-day almost invariably identical. In illustration of the position which I am supporting I wish to close my paper with a short history of the twelfth case on my list, one which illustrates unusually well that position.

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After removal, in the former case we may simply have to deal with a dead space; in the latter a formidable hemorrhage, injured structures and a veritable cavity are the conditions which may either endanger the patient's life or protract convalescence by the defect becoming an infection atrium, or a circumscribed pus sac. In some of these cases, especially those which show signs of malignacy and some multilocular cysts, ligation of the ovarian and uterine vessels previous to enucleation is quite imperative, and in these the obliteration of the undisturbed sac would be impracticable, but in the monocysts and non-malignant growths, even if hemorrhage is controlled by previous ligation, the patient still does not escape the danger of injury to the ureter and bladder, either in the enucleation of the tumor or the obliteration of the sac, and if the latter be impossible it may only be successfully drained per vaginam; in which case, in spite of our best efforts it usually becomes infected before it is completely closed. This infection is protracted because of the dead space that necessarily is formed by the removal of the cyst and which is not effaced by approximation of the broad ligaments; in endeavoring to bring these together the task becomes both difficult and dangerous because the growths frequently displace and deform the contiguous structures to such a degree that it becomes almost impossible to recognize them by anatomical differentiation.

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The disposition of an ovarian cyst, whether pedunculated or sessile, without resorting to the usual manipulation of adjacent organs which is frequently necessary in ligation or enucleation seems of still greater value when coexistent with pregnancy. While gentleness is required in all intra-abdominal manipulations, still, in handling the gravid uterus, we can not be too careful, and yet in spite of the greatest precautions in endeavoring to ligate a pedicle or enucleate a cyst it may become so displaced that in recovering its position, or in becoming adjusted to its environment, forces may be excited that eventually result in premature labor. It seems that here also the obliteration of at least a portion of the sac, in view of the fact that it could be done with less disturbance of the viscera, especially if the blood-vessels were not unusually large, would be the preferable operation. I believe, moreover, that the complication of premature labor which so frequently follows operation in these case, is due not primarily to the operation per se, assuming that there has been no infection, but as has already been suggested, to the readjustment which necessarily takes place in the restoration of the uterus subsequent to the removal of the cyst, whether that readjustment be a return to the position which it previously held and from which it was disturbed by our manipulations, or a new relation in consequence of the removal of a cyst which caused either lateral or upward displacement. In either event it is easy to conceive how a train of forces may be set in motion which sooner or later may result in labor.

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sealed with iodoform collodion and cotton. On either side of the sac a fluctuating tumor could be recognized; that on the left was diagnosed as an ovarian cyst, but the pathology of the one on the right was not so clear.

An incision in the median line above the umbilicus disclosed the same studded tubercular deposit on the intestines, with ascitic fluid, and a left unilocular, ovarian cyst, with a short pedicle, extending to the umbilicus; on the right a pyosalpinx, firmly adherent to the remaining unoccupied portion of the right pelvis, containing about four ounces of pus. It was utterly impossible either to ligate the pedicle of the cyst or remove the pyosalpinx, 1, on account of the height of the incision; 2, because of the immobility of the adherent intestines and the circumscribed abscess sac which occupied the bulk of the pelvic cavity.

After carefully walling off the intestines, the cyst was aspirated and about three-fourths of the collapsed wall removed; the interior of the remainder was thoroughly painted with tincture of iodin and, by the aid of a long dissecting forceps and needle holder, the marginal ends were turned in with an over-and-over continuous stitch. The pyosalpinx was aspirated in the same manner, the sac laid open, as much as could be reached removed, and, after careful sponging, the cavity cauterized with a solution composed of equal parts of carbolic acid and alcohol, care being taken to sponge out an excess of fluid which might remain. After closing the sac in a manner similar to that employed with the cyst, the abdominal wound was sutured and sealed.

Except for the through-and-through irrigation of the pelvic abscess, the convalescence of the patient presented no special points of interest, and the recovery from the lesions of the adnexa was ideal.

The case represents a type of those in which it is very difficult to remove the pathologic lesion, owing either to the location of the tumor or its structural intimacy or relation with some important organ, and furthermore illustrates the feasibility of cyst obliteration where removal is impossible. In the evolution of medicine we are not only developing more exactness, but greater simplicity; instead of prescribing for a disease we quiet a vasomotor disturbance by an agent of known physiologic action. In surgery we are in pursuit of the same ideals, and these are being realized as a result of more accurate anatomic differentiation and by the application of well-established and tried general principles in specialism. And thus, in dealing with the pathology under discussion, with greater experience and more extensive observation, the principle will appeal to us because it is rational, and while, surgically, pedicle ligation and extirpation may seem the more logical, the alternative suggested will be employed more frequently because of its signal advantage, becoming the operation of election, instead of, as now, the one of necessity.

217 South Broadway.

OBLIGATIONS OF PHYSICIANS RECEIVING SALARY.—The French courts recently decided against a physician sued for damages by the widow of a pauper, on the ground that he did not respond promptly and made but the slightest examination, although he was the official, salaried physician to the poor of the community. The courts said that a verbal or written contract compels the physician to respond to calls and to continue his attendance in such a manner that no one can accuse him of negligence.

PARALYSIS AGITANS WITHOUT TREMOR.*

AUGUSTUS A. ESHNER, M.D.

Professor of Clinical Medicine in the Philadelphia Polyclinic; Physician to the Philadelphia Hospital; Assistant Physician to the Orthopedic Hospital and Infirmary for Nervous Diseases.

PHILADELPHIA.

It is probable that no system of nomenclature yet devised is capable of meeting all requirements, because of constant additions to knowledge and corresponding variations in classification. This difficulty is especially manifest in medicine, where names are chosen sometimes from fancied resemblances, or from the prominence of certain symptoms or certain lesions, or on the basis of current and varying clinical or pathologic conceptions; or, worst of all, in intended honor of the discoverer or exploiter. With the progress of knowledge and with more extended observation, however, it not rarely happens that symptoms or lesions considered so distinctive as to be incorporated into the name given a disease, are found to be not invariably present, but are at times so ill developed as to be inconspicuous. Thus, we have learned from experience that typhoid fever may be unattended with typhoid symptoms, or elevation of

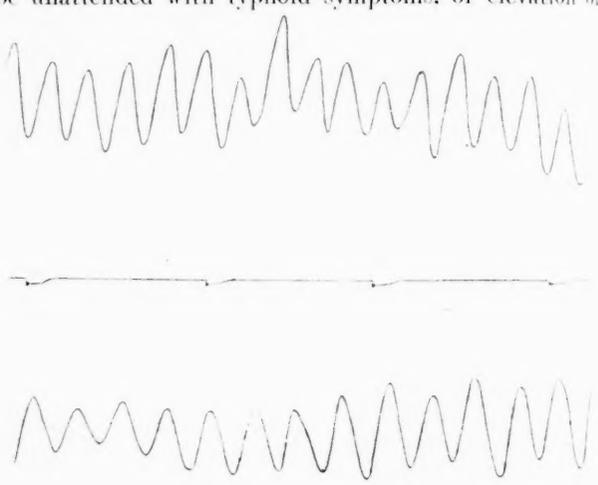


Fig. 1.—Both curves exhibit the inhibiting influence of passive extension of one of the fingers. The interrupted straight lines represent time in seconds. To be read from left to right.

temperature, or intestinal lesions; exophthalmic goiter, without either protrusion of the eye-balls or enlargement of the thyroid gland; scarlet fever or smallpox, without exanthem; paralysis agitans or shaking palsy without tremor or agitation or true palsy.

The tremor of paralysis agitans is so distinctive and so constant that one might consider the diagnosis exceedingly difficult if at all possible in its absence. Even then, however, there is something in the *tout ensemble* of the case that makes the recognition comparatively easy and certain, if one be on his guard. The tremor is, further, the earliest symptom in the majority of cases. When present, it is rhythmic and relatively slow and coarse, while its range is variable. It almost invariably persists during rest and is temporarily inhibited by voluntary action as well as by passive movement, and probably also by other influences, although subsequently it may be resumed with its original or even with increased intensity. Rarely it has been absent or slight even during rest, and it has been induced or increased by voluntary action. It is ag-

* Read before the Medical Society of the State of Pennsylvania, at Wilkesbarre, Sept. 20, 1900.

gravated by observation and emotional influences, but it ceases during sleep, and sometimes also in members paralyzed as a result of intercurrent organic disease of the brain. It often differs in degree upon the two sides of the body, more especially in the upper extremities, although when both sides are involved, the movements of the two sides are synchronous, it generally appears first in the upper extremities, especially the hands and fingers, and it may extend in monoplegiform, hemiplegiform or paraplegiform manner. The movements sometimes appear purposive, and resemble those that would be made in rolling pills or in holding a pen or in spinning wool. I am in the habit of describing them as intrinsic, because, unlike those that attend other forms of tremor, they appear to take place within the member rather than at its extremity merely. They seem, at times, to consist almost wholly in active flexion with reactive extension. I have found the frequency of movement to vary between 4.5 and 8.9, averaging, however, 5.9 oscillations per second.[1] The accompanying tracings will illustrate the frequency of the movement, its range—magnified—and its synchronousness on the two sides of the body, notwithstanding its predominance on one side, as well as the influence of voluntary and of passive movement. It has long been recognized, however, that the tremor is not absolutely constant, and its absence does not invalidate the diagnosis.

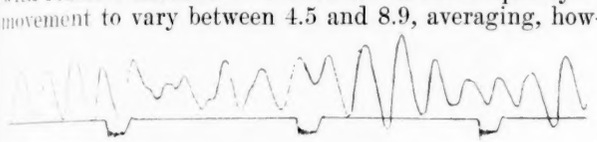


Fig. 2.—The movements of both hands recorded simultaneously. The upper curve represents the movement of the right hand; the lower, that of the left. In the latter the inhibiting influence of voluntary action is illustrated. The tracing exhibits the synchronousness of movement on both sides. The interrupted straight line represents time in seconds. To be read from left to right.

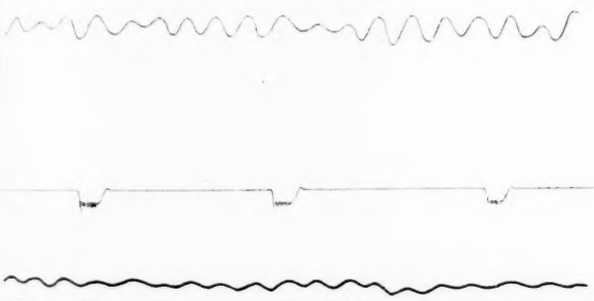


Fig. 3.—The upper curve represents the movement of the right hand; the lower that of the left. The interrupted straight line indicates time in seconds. Movement from left to right. Frequency, 6 1-3 per second. The tracing exhibits synchronousness of movement on the two sides, although the range of movement is greater on the right.

Not less distinctive than the tremor is the impairment of mobility. This has been attributed to muscular rigidity, to delayed transmission of volitional impulses from the cortex, and to muscular weakness. It attends efforts at both active and passive movement. It is this symptom that is responsible for the peculiar appearance and attitude of the patient. The face has, as a rule, a fixed, stolid, unemotional expression. The body often presents a forward inclination, the shoulders being round and stooped and the patient has a tendency to run forward. The knee-jerks are at times irritable and excessive, and occasionally there is abortive ankle-clonus. When rigidity is marked, the reflexes may be inhibited mechanically.

Among other symptoms of a subordinate character, are a sense of undue heat and increased sweating; a feeling of restlessness is also not an uncommon manifestation, necessitating frequent changes of posture and interfering with sleep. The patient is often depressed, though occasionally cheerful. There is, as a rule, no pronounced mental impairment, although failure of memory may be complained of.

Little is known of the etiologic factors responsible for the development of paralysis agitans. Direct inheritance of the disease is rare, although an indirect neurotic heredity is not infrequent. The disorder is more common in men than in women, and most so between the ages of 40 and 50. Antecedent infectious disease or intoxication has in some instances been thought to be

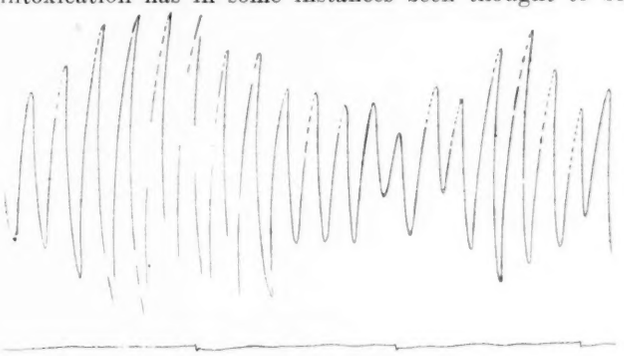


Fig. 4.—The above represents 3½ seconds. Movement from left to right. Frequency, 6 per second.

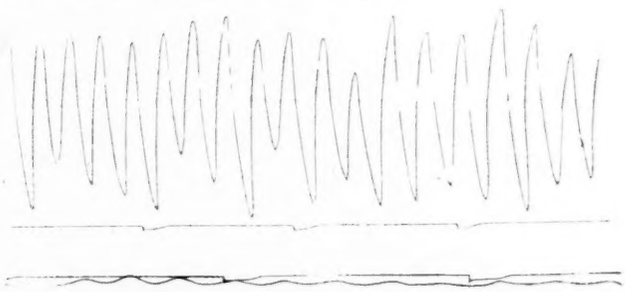


Fig. 5.—The upper curve exhibits the frequency and rhythm of movement, the lower apparently spontaneous inhibition, as well. The interrupted straight lines represent time in seconds. To be read from left to right.

operative. The onset is generally insidious, exceptionally acute, and the course is slowly progressive. The first symptoms not rarely follow profound emotional disturbances, long-continued overexertion or traumatism, and they may appear in the member specially affected.

The disease is one of the predegenerative period, and such lesions as have been found are not unlike those that attend senility. The disease is progressive and generally protracted in course, and not amenable to curative treatment. There may be remissions and exacerbations in the symptoms, or they may appear to be stationary. The patient eventually becomes incapacitated for his usual pursuits and death ultimately results from exhaustion or intercurrent disease.

Various palliative measures may, however, be employed, such as the administration of hyoscin or hyoscyamus, gentle exercise, active and passive, and the observation of general hygienic precautions.

1. Journal of Experimental Medicine, vol. ii, No. 3, 1897.

The tremor of paralysis agitans is to be differentiated especially from that of senility, of alcoholism and other forms of intoxication, from the incoördinated movements of multiple cerebrospinal sclerosis and from hysterical tremor. Senile tremor, however, rarely, if ever, begins in one member or on one side, but generally is distributed uniformly. It is usually fine and frequent, slight or absent during rest, is increased by violent effort, is not associated with rigidity, occurs later in life, and is not progressive in course. The various forms of toxic tremor, likewise, are fine, frequent, general, slight or absent during rest, increased on voluntary action, and unassociated with rigidity. They may, of course, occur at any time of life, although more common during active adult existence, and in conjunction with other more or less distinctive symptoms. A history of exposure to the exciting influence is of decisive importance in the diagnosis. The movements of multiple sclerosis are coarse and somewhat unlike ordinary tremor, being rather incoördinate and wanting in rhythm. They are also generally absent during rest and are induced only by voluntary effort, and are often associated with lesions of the fundus of the eye, with nystagmus, scanning speech and derangement of micturition, while rigidity is not likely to be present and the peculiar facies of paralysis agitans is wanting. The tremor of paralysis agitans is to be differentiated from that of hysteria by the association with the latter especially of other hysterical stigmata and by the influence of suggestion.

Paralysis agitans without tremor is not so common that the report of two cases recently under observation in which tremor was the least conspicuous of the symptoms may not be without interest. Both patients were seen at the Orthopedic Hospital and Infirmary for Nervous Diseases, the one in the service of Dr. S. Weir Mitchell and the other in that of Dr. Wharton Sinkler, to both of whom I am indebted for the privilege of making this report.

S. S., a plumber 50 years old, presented himself for what he designated nervousness. He suffered from mental confusion, with depression and introspection. There was also weakness of the legs, more marked on the left. For several years there had been stiffness, which began with a cramp-like feeling in the left foot, and extended to the shoulder and elsewhere. Slight tremor was noted and this the patient stated occasionally became quite marked, although at times it was scarcely, if at all, appreciable. The patient presented the typical appearance and facies of a case of paralysis agitans. The face was fixed and immobile, the attitude was stooped forward, the speech was slow, the voice low and monotonous, and all movements and apparently also cerebration appeared slow. The knee-jerks were small and station was steady. The pupils were full, equal, regular, reactive to light. The grasp was firm, the dynamometric register being 170 on the right and 130 on the left. There was some tendency to propulsion. The action of the heart was rhythmic and the sounds clear. The radial artery was stiff and the tension plus. Memory was impaired; sleep was poor; the bowels were constipated. The patient was easily chilled and suffered readily from cold, and under such circumstances the hands became cyanotic. The urine presented no abnormality. The man once had gonorrhea, but there was no evidence of syphilis. He had used alcohol, tobacco, coffee and tea only in moderation. He had suffered business reverses and one of his daughters was neurasthenic from overstudy.

J. H., a woman 68 years old, presented herself on account of weakness in the lower extremities and in the back, with difficulty in walking. There was slight tremor in the right hand on voluntary movement. The countenance was rather fixed. Speech was slow and the gait decrepit. The knee-jerks were slightly exaggerated, but there was no ankle-clonus. On inspection it was found that both hands were tremulous when held out, but not when in action or at rest. The tremor was said to be more marked on some days than on others. Station was unsteady, the patient yielding toward the right, as she did also in walking. In attempting to walk there was some delay in starting out, and all movements were performed slowly. The action of the heart was rhythmic, the first sound clear, the second greatly exaggerated. The pulse, though not strong, was of increased tension. The pupils reacted to light. The patient suffered from no sense of undue heat, and from no excessive sweating. An additionally interesting feature of this case is the fact that a daughter 47 years old, who merely accompanied her mother and did not seek treatment, presented a distinctly cretinoid appearance. She had not learned to walk until the age of 3, although she spoke clearly and subsequently did well at school. Menstruation had not begun until the age of 22. The patient was short of stature, measuring only 4 feet 6 1/2 inches in height. The thyroid gland, especially the right and middle lobes, was found enlarged, and is said to have been so for seven or eight years. The complexion was pale and muddy, and the skin wrinkled; but there was no thickening of the subdermal tissues. The tongue was rather large and rough, and intelligence appeared deficient. There was no tachycardia and the eyes were not prominent. The knee-jerks were active, but there was no ankle-clonus.

While it can not be strictly said that in the two cases of paralysis agitans which I have reported the tremor was wholly absent, it was at times so inconspicuous as not to be viewed as a symptom of importance, much less of diagnostic utility. The main object of this communication is to invoke renewed attention to the fact that the disorder under consideration may be unattended with tremor, and further that this, when present, may be accentuated by voluntary action.

NEW METHODS FOR THE APPLICATION OF OLD PRINCIPLES IN THE TREATMENT OF FRACTURES AND DEFORMITIES OF LIMBS.

JAMES G. HUGHES, M.D.
SHEBOYGAN, WIS.

In all cases of fracture, to restore and maintain the limb in its normal position, extension and counter-extension between bony prominences, or a flexed segment of the limb, above and below the fracture, must be employed.[1] To this must be added immobilization, when normal position of the limb is accurately secured. In addition to the above principles, the open dressing, in compound fractures, is of primary importance for obvious reasons. Every splint should permit of inspection, bathing, ventilation, etc. There should be no circular constriction of the limb to retard the circulation. The effects of impaired circulation, delayed union, ischemia, stiff joints, and in some cases non-union, can be ascribed to this interference.

It is safe to say that fully one-half the fractures of the leg should be treated by the ambulatory method. Many patients assume the erect position in spite of the warnings of their medical attendant. The patient suffering from a fracture of the leg, or thigh, is asked to assume the recumbent position until nature repairs the solution. The principles governing the treatment of fractures are the same in the erect as in the recumbent position, and can be applied in one case as well as in another, and if these principles are fulfilled, displacement can not occur in either position.

With a view of embodying the above principles in

1. American Text-Book of Surgery, 1893, p. 287.

the treatment of fractures of the arm, and of fractures, deformities and diseases of the leg and hip-joint, the writer has constructed splints for the upper and lower extremities, each embodying the same general principles, so that a description of any one will suffice. The splints consist of inflatable cushions, in combination with adjustable stays, arranged in such a manner that there is no solid contact any where on the limb.

Each part of the splint is simply and easily adjusted. The cushions prevent any injury from pressure, and over the ankle they are arranged vertically with interspaces to permit of free circulation while securing extension. The leg or immobilizing cushions may be segmented if desired, but as the bones are not so superficial as at the ankle, and as there is no traction on the

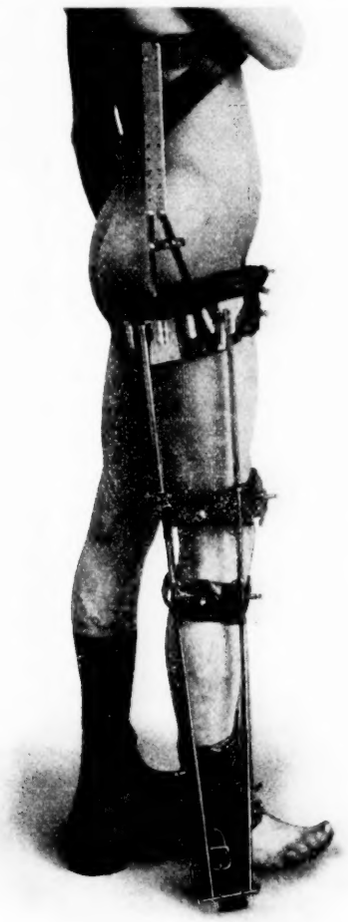
Pneumatic splint with belt suspender attachment for walking.

cushions, this is not necessary. The hip-cushion grasps the thigh at the angle of the pelvis, and is arranged so that it can be made to follow the angle of the right or left thigh, as desired. The sock grasps the leg at the ankle, with interspaces between its vertical cushions. By means of the adjustable stays, extension and counter-extension is made between these points with turn-screws and key. With solid metallic connection between these cushions, the degree of separation on which the adjustment depends remains the same, no matter what position is assumed.

Shortening is prevented in fractures of the leg and thigh. Immobilization is secured by the aid of the leg-cushions, and clips connecting the stays, and is under full control, deformity being prevented, as well as shortening. When the splint is applied, the foot does not come into contact with the foot-plate.

In the ambulatory treatment, when the weight is placed on the foot-plate, it is received by the pelvis, the leg being in a "sling," suspended from the pelvis. A cane should always be carried, but where desired, a crutch may be substituted.

The shoe of the opposite foot should be raised, to match the raised foot. The erect position, with a limited amount of exercise, will tend to preserve the general health, increase the circulation, hasten absorption, and promote growth and repair, this, with the accuracy of adjustment which preceded it, and can be secured by this method, limits the amount of softening and absorption, hastens the time of healing, and avoids the usual muscular atrophy which accompanies fractures owing



Pneumatic splint with immobilizing hip-joint attachment for walking, the adjustable belt not shown in illustration.

to disuse of limbs and circular constriction.

Bandaging to assist in retaining the fragments in apposition should pass from the leg or arm to the stays, for better support and to avoid circular constriction.

The suspender attachment supports the weight of the splint, from the body, and is adjustable.

The accurate coaptation secured by this method reduces pain, lessens the amount of softening and absorption, and hastens convalescence. By avoiding circular constriction, we limit the amount of exudation, facilitate growth, repair, and absorption; avoid ischemia and stiff joints.

Is circular compression adequate to maintain the apposition of the fragments? Experience in fractures of the upper third of the femur has shown that circular compression, no matter how applied, can not by itself maintain apposition. What is true in the upper third

is also true, in a lesser degree, in other places. The beneficial effects of circular constriction with bandage and cast, has been over-estimated, while its dangers and disadvantages have been too little commented on, if they have been fully appreciated. Open dressings facilitate inspection, dressing, bathing, ventilation, massage, and any indicated treatment, the importance of which needs no emphasis. The attachment for immobilizing the hip-joint is applied in fractures of the neck of the femur, and also used in hip-joint diseases, and is on the same principle as that now in vogue. When the key is removed and the caps replaced, the splint is locked, and the adjustment can not be interfered with. The pneumatic pads are covered with satin-finished waterproof leather, and can be cleaned with warm water and soap when necessary.

The splints are easily worn under the regular clothing, and are so well constructed that they will last practically a life time.

They have been tested by the writer in some severe cases, with perfect results; among them, one case of compound, comminuted, multiple fracture of both legs. The bones in the right leg penetrated the skin in five different places, and in the left leg, in three. Several loose fragments of bone had to be removed. The usual dressings were tried, but had to be abandoned on account of the excrutiating pain and stasis. Amputation of both legs was considered necessary by attending physicians, but the patient would not submit to it, and further counsel was called, resulting in the application of pneumatic splints to both legs. The pain ceased at once, on application. The absence of circular constriction allowed complete restoration of the circulation, and permitted of proper open dressings for the wounds. The splints were only worn thirty-three days; ankle and knee motion was in no way impaired; the union and result was perfect.

I mention another case, on account of the attending circumstances, one of simple fracture of the tibia. The patient was erecting a house at the time, and hauled lumber seven miles daily, without discomfort and with perfect result.

Before bringing the appliances to the notice of the profession, they were submitted to some of our most eminent surgeons, whose unqualified endorsement has demonstrated the unparalleled excellence of the treatment.

POSSIBILITIES OF LIQUID AIR TO THE PHYSICIAN.*

A. CAMPBELL WHITE, M.D.
NEW YORK CITY.

It is now over a year since I began the use of liquid air in the hospitals of New York, and less than a year since I published in the *Medical Record* a preliminary report of the results obtained by its use up to that time; and I am led to-day to accept your invitation to present this subject to your Section, no less by the pleasant recollections of the last time I appeared before you, than by the many communications I have received since publishing my report, from all parts of the world, demonstrating the lack of knowledge of the public as well as physicians as to what liquid air really is. I have received requests from physicians from nearly all parts of the United States, from Mexico, from Germany and even from New Zealand, asking that a small package be sent and all expense would be paid at the other end. I have been asked whether it were given hypodermatically, and whether it would not be good taken in small doses internally for abscess of the liver. One physician, who has represented many drug houses, wanted to know if it could not be put up in small packages and retailed at the drug stores and whether he could not act as my Southern agent. Nearly all physicians say, in discussing the subject, "Oh, we have tried extreme cold before and know it is no good." Possibly there are some of you here this afternoon who have never seen liquid air, and if so, I shall demonstrate that you really never knew what cold was before. I intend at least to show you what liquid air really is, and have brought with me, through the courtesy of the Tripler Liquid Air Company, a generous supply in order that I may show you its physical properties and demonstrate some of its applications, as well as show you some of the appliances which more directly concern us.

After doing this, I desire to briefly tell you of some of the things we have accomplished with it at the Vanderbilt clinic of Columbia University, and elsewhere, and then call attention to some of the things which may be done in the treatment of internal diseases. [Dr. White gave several demonstrations with liquid air.]

In my former paper I told of the results of our attempt to kill germs with liquid air. With Dr. William H. Parks, we tested the effects of liquid air on typhoid, anthrax and diphtheria bacilli. In order first to test the effect of extreme cold on these germs without bringing them in direct contact with the liquid, we put into a number of capillary tubes pure cultures of virulent anthrax, diphtheria and typhoid bacilli. These capillary tubes were marked for identification, sealed at both ends, and dropped into a glass of liquid air. The liquid was renewed at intervals, so that the tubes were at all times completely submerged. Some were removed in thirty minutes, others in forty-five minutes, sixty minutes, and ninety minutes. After they were removed from the liquid and the sealed ends were broken, they were dropped into separate culture-tubes containing fresh sterilized bouillon, and these in turn marked for identification. These bouillon tubes were placed in incubators kept at a temperature of 38 C., where they remained for over forty-eight hours, when they were all examined and found to contain pure cultures of anthrax, typhoid and diphtheria bacilli according as they had been inoculated. In order to test whether liquid air itself in addition to its temperature would have any effect on germ life, a culture-medium containing numerous colonies of anthrax bacilli was dropped into a glass of liquid air and allowed to remain over an hour. When removed, a fresh sterile culture-medium was inoculated with the one exposed to liquid air and placed in the incubator as before. The same result was obtained as when the capillary tubes were exposed.

Dr. J. H. Huddleston tried the effect of liquid air on vaccin virus, and found that fifteen minutes' or less exposure to the liquid air had no effect whatever on the power of the virus to produce vaccination.

Longer exposures to liquid air have been tried with the same result. Dr. Park has recently made further experiments, making the exposure over two hours and exposing all kinds of germ life in form of pure virulent cultures, from hay infusion to anthrax bacilli. With this exposure, taken all together, from the weakest germs to the strongest, it kills from 98 to 50 per cent. Of the typhoid germ it kills about 75 per cent. in two

* Presented to the Section on Diseases of Children, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

hours' exposure, the staphylococcus about 50 per cent., and the diphtheria typhoid, about 65 per cent. This exposure does not completely destroy the virulence of any pure culture, but of course the activity or virulence of all these germs is suspended for a long time after exposure to the liquid air, and they are only brought back to activity by the most careful handling and under the most suitable conditions. Professor Dewar, of London, is reported to have given bacteria exposure to liquid air for two weeks, with practically the same results.

Now the question is, knowing these facts, what is the effect of liquid air upon germs existing in the living tissues of the body. We know that the human organism is the natural enemy of the bacillus. We have reason to believe that the human system develops an antitoxin when invaded by the ptomain-producing bacteria, which under most conditions is successful in withstanding this invasion. Is it not possible that the temporary suspension of the vitality of these germs, due to the application of liquid air, gives nature the opportunity to completely destroy them, particularly when we remember that the local circulation is much increased shortly after the application.

Buchner,[1] in an article on the natural defenses of bacteria, speaks of the results obtained by us in the use of liquid air, and attributes all our success to the subsequent local hyperemia produced.

CLINICAL USES OF LIQUID AIR.

Liquid air, applied to the healthy living tissues, causes a temporary local anemia accompanied by anesthesia, or a slough, depending upon the amount used.

The results obtained by an excessive application are best explained by the experiment performed on the rabbit, before we had used the liquid air on the human body. About three-quarters of the ear of a rabbit was completely frozen by placing it in liquid air for some minutes. The ear was frozen so stiff that a small piece of the tip was broken off with the fingers without pain or hemorrhage. In less than ten minutes' time the circulation was entirely re-established with hemorrhage at the point where the piece had been broken off; the frozen part had regained its normal temperature—possibly a little higher—and color. The ear remained perfectly normal for about five days, when it began to swell somewhat, and by the end of two weeks about one-half of the frozen part had shriveled and dropped off. The remainder of the ear regained its normal condition. The part to which the liquid air is applied—with the spray—immediately loses all the blood, becomes perfectly colorless and is accompanied in the application by no pain excepting a slight tingling sensation which is only felt at the very beginning of the application. If only a slight amount is used the circulation almost immediately returns, the part becomes congested and frequently elevated, looking like a wheal or urticaria; this subsides soon and may or may not for a while itch to a slight extent. The anesthesia lasts not only while the anemia exists, but for some time after, owing to a temporary paralysis of the sensory nerve terminals. A freezing sufficient to produce anesthesia for ten minutes can be given without causing any more destruction of tissue than a slight desquamation of the superficial epithelium, which in no way interferes with primary union.

I recently did an operation under the influence of local anesthesia produced by liquid air, for the purpose of relieving a deformity of the hand resulting from a poorly-treated burn of childhood. The hand was freely incised, and the fascia cut here and there, relieving whatever adhesions existed. The operation caused no pain, the result was perfect, and primary union was in no way interfered with. I could mention any number of cases equally successful where liquid air has been used as an anesthetic.

I think you can readily appreciate in how many cases this anesthesia would be preferable to any other, for example, opening of an abscess, where there is always an element of some danger in the use of cocain; incising a paronychia; and of what great value it would be in a cardiocentesis, paracentesis thoracis or abdominis, where the vital functions are already at so low an ebb as to preclude the use of anesthetics.

In this connection I will just mention the almost invariable success resulting from the application of liquid air in the same way over the spinal end of the nerve in neuralgias and herpes zoster. The pain ceases almost immediately; rarely is more than one application necessary, and the only bad result has been some ulcerations at the point of application in some patients of advanced years, where the vitality of the skin was exceptionally low. These ulcerations readily heal with proper treatment, and are, as a rule, a pleasant substitute for the pain of neuralgia and herpes zoster.

As a cold application to allay or abort an acute inflammation, its use is ideal, and should be applied intermittently with the roller. The same would apply to an acute adenitis—not neglecting to treat the cause.

In the treatment of a boil I would use the spray, and, if just beginning, I would completely freeze it, possibly pricking it while frozen here and there with a needle, in order to relieve any subsequent congestion. If pus to any extent had formed I would freeze and make small incisions. It will always abort a boil if taken in time, although of course not preventing others forming.

From my experience in the local treatment of carbuncle with liquid air I am satisfied from every point of view that this is by far the best form of treatment. It is less painful to the patient than any other form of treatment. Only one application is necessary; within twelve hours of the first application, the pain entirely ceases, not to return again, and at the end of a few days only a small ulcer is left—representing the tissue between the openings of the carbuncle—which readily repairs with usual dressings. In the treatment of the carbuncle the spray is used, first projecting it into the openings and using the air quite freely, then quite thoroughly freezing the external surface, which must be well cleansed of discharge resulting from sending air inside of the carbuncle before freezing. After freezing, the carbuncle should be dressed with a dry absorbent dressing, so that the discharge, which will be abundant and accompanied with considerable bleeding, can be readily absorbed. The reaction from the freezing takes place in about twenty minutes, and it is to this extreme hyperemia that I attribute the success of liquid air in the treatment of this affection more particularly.

Before using liquid air in lupus we anticipated success, and our expectations have been realized, both in the treatment of the erythematous form and in lupus vulgaris. In the former variety we use the cauterizing instruments frequently, not freezing to any great extent at each application. Excessive desquamation results after each application, until good healthy skin appears, slightly reddened. The applications are then stopped and the redness soon disappears. Lupus vulgaris is treated rather generously with the spray once

1. Münch. Med. Wochschr., Oct. 3, 1899.

or twice. This causes a slight acute inflammation, which results in a healthy ulcer that quickly heals.

As a stimulant in the treatment of chronic ulcers, varicose and non-specific, one application, not to the point of freezing, but intermittently for about five minutes with the spray, is of great utility.

Liquid air as a cauterizer is probably the first thing that would occur to us after having seen and handled it, particularly for the removal of the benign foreign growths. For this purpose we now use liquid air to the exclusion of almost all other methods. For the quick and comparatively painless removal of a nevus, without any resulting scar, it is not equaled by anything we now have at our disposal. I have already shown you the instruments for its application in this direction for the destruction of adenoids, polypi, nevi and other hypertrophies.

The study of carcinoma has been universal and popular during the last few years, and this study promises to disclose the true cause of this dreadful and undoubtedly increasing malady. No doubt when its true etiology has been established we will find some treatment which will prove either prophylactic or curative. I think we must all have been impressed who have seen many of these cases, with the utter futility of almost every method of treatment at our disposal; even surgery seems to give in nearly all cases only a temporary relief, to be followed by even more malignant growth. The consideration of cancer is certainly not a subject of discussion for this Section, but I would not be doing justice to my subject did I fail to mention the great good liquid air has done in these cases. Even in cases in which the treatment has failed to cure, which were far beyond operative interference, where the patient has had two or three operations, where the patient has had every "special treatment," quack and otherwise, in the country; even in these cases, the great good done in the relief of pain and the destruction of bad odor, both so characteristic of this disease, places liquid air in efficiency far above any other treatment we have to-day.

In my previous paper I said I could make no claim for liquid air in the treatment of cancer, for my limited experience at that time, though promising, did not warrant my offering any encouragement; I can truly say to-day that I believe that epithelioma, treated early in its existence by liquid air, will always be cured, and that many cases inoperable can also be cured by its application. Prof. George H. Fox, in one of his lectures in the College of Physicians and Surgeons, New York, presented last autumn one of the first cases treated at his clinic by liquid air. This patient, a woman some 60 years of age, had an epithelioma on the right face, involving the outer canthus of the right eye. Professor Fox, in presenting this case, said, "No treatment at our disposal could have destroyed an epithelioma of this character in so short a time and with so slight a scar remaining as liquid air has done in this case." This subject requires a paper devoted entirely to its consideration, and I am sorry I can not present the history of some of these cases in detail, those which have recovered and those less fortunate, for every one bears testimony to the efficiency of liquid air in the treatment of carcinoma.

When we come to consider the use of liquid air in the treatment of non-cutaneous diseases, there is a very broad field open to us and many obstacles present themselves which are difficult to overcome. I think it will at once occur to us all that we ought to be able to use this cold, dry vapor given off by liquid air, for the reduction of temperatures in fevers in something the same manner as we now give hot air and steam baths to promote activity of the skin. We are now having made an apparatus which we hope will accomplish this result; if so, it will be much more simple than the cold plunge and be much more pleasant and agreeable to the patient, accomplishing at the same time the desired results.

I have also thought that the inhalation of this vapor, which is almost pure oxygen, would be of great value in the treatment of certain diseases of the air-passages, such as hay-fever, acute laryngitis, tubercular laryngitis and possibly pulmonary phthisis. For this purpose I am having made an inhaler which will carry the vapor well back over the glottis before it becomes warm; and, furthermore, this vapor can be medicated, and in this way carry with it some remedy which might possibly add to its efficiency. The results of this treatment are, of course, purely speculative, but I anticipate success in this direction in the treatment of at least some of the diseases mentioned.

I regret that time does not allow me to go more fully into details regarding some of the cases I have treated with liquid air; but if I have given you all a fair idea of what liquid air is, what it looks like and what some of its possibilities are to us and to our patients, I shall feel well repaid for undertaking this demonstration, and I hope the discussion which is to follow will bring out many new points we have not thought of before.

DISCUSSION.

DR. LOUIS FISCHER, New York City—It seems to me that the question of local anesthesia is one of great importance to pediatrists, as for instance in the treatment of scrofulous manifestations, local abscesses, suppurative adenitis, various forms of peritonsillar abscess and the removal of adenoids of the pharynx.

DR. WAHER.—In the treatment of carbuncle, is your object to establish a slough?

DR. A. CAMPBELL WHITE—There are usually four openings around the center, forming, so to speak, the corners of a square. These corners will slough, but not the edges. The good results in carbuncle I believe to be partially due to the fact that these openings exist. The excessive congestion which comes on after the application of the liquid air is relieved by a free discharge through these openings. There is only a temporary suspension of the activity of the bacilli.

DR. L. J. LAUTENBACH, Philadelphia—Did you freeze and operate with the knife upon the case of epithelioma at the side of the eye?

DR. WHITE.—No, we used the liquid air cauterizer and simply closed the eye. When liquid air strikes the skin it is for the moment at a temperature of 312 F. below zero. I should freeze slightly, then wait and repeat the operation perhaps three or four times. The woman referred to had twelve treatments. There was a marked and edematous inflammation of the side of the face. It subsided in about three days. After that the improvement was very decided. This has been true of almost all cases. I have applied liquid air in epithelioma of the tongue. Here there is so much moisture that inflammation is easily excited, so that this agent must be used with great care. In two cases, one in the anterior part, and the other in the posterior part of the tongue, I have used the liquid air. After about three or four applications it was necessary to temporarily stop treatment because of the inflammation induced. Great care must be observed in posterior cases for fear of the possibility of edema of the glottis arising. Almost no sloughing follows the application of liquid air. The destruction is very superficial as we use it. In a case of carcinoma of the face we break up the intercellular substance of the epithelioma by freezing, and destroy the nutrition of the superficial cells. When the patient first returns there is a small ulcer, and we repeat the application. Eventually there is no further return. I would not dare to put a glass instrument into a child's throat

for removing adenoids; I should prefer to make use of one made of thin aluminum. I have treated erysipelas by filling a glass globe with liquid air and rolling it over the surface. For local refrigeration I have made use of a brass roller into which liquid air is introduced, and then the roller is passed over the part.

MOVEMENTS OF INTESTINES.*

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During treatment of a woman for floating kidney, nervousness and general debility, I administered—in the course of a rest-cure—enemas of cottonseed-oil; one time, about five hours after the injection, the patient vomited, the vomit for a greater part proving to be cottonseed-oil, this incident showing the possibility of a retrograding current of the oil from the rectum to the stomach. These oil enemas were administered for over two weeks and it was only this one time that oil was vomited. I was induced by this fact to make some experiments with injections into the rectum of a negro; these will be mentioned later on; besides I used a black-and-tan dog for experimenting, and, later on, in treating a woman for mechanical gastric insufficiency with a subacid condition, in which vomiting was not infrequent, the nutrient enemas used served as experiments.

It is for the research into the consumption of such nutrient enemas that various investigators experimented on the movement of the intestines, to learn of possible antiperistalsis of the gut.

Celsus (3-5 B. C.) mentioned the efficiency of nutrient enemas; in 1869 Voit and Bauer, in Munich, investigated their value as to absorption in the body, and found that an egg-emulsion, with the addition of a pinch of sodium chlorid, will be easily absorbed by the mucous membrane of the rectum and colon. Eichhorst, two years later, observed the same results. Czerny and Latschenberger, experimenting on men, found that not only albuminates, but also fat in emulsion and paste of starch, would be absorbed, when introduced into the rectum; they could not determine whether the starch is converted into sugar or not before the absorption, and it remained doubtful where the absorption occurred. Leube thought it necessary to peptonize the enema by mixing it with pancreas before injecting it into the rectum. Ewald, making a greater series of experiments, declared the peptonizing process superfluous, finding that an emulsion of egg-albumen will be absorbed even without the addition of sodium chlorid. Huber took an intermediate position between Voit and Bauer and Eichhorst on the one side and Ewald on the other; he recognized the fact of absorption without sodium chlorid, but the absorption was better with an addition of salt. Hemmeter explains the absorption without an addition of sodium chlorid, because this salt is naturally present in the egg. The absorption of the enemas was always said to occur in the lower and lowest parts of the bowels. L. Landois, in his book on physiology, says that the ileocecal valve prevents in general the contents of the colon from re-entering the ileum. When liquid masses are injected gradually into the rectum through a tube, they may get above the ileocecal into the ileum. In 1884, Nothnagel saw antiperistaltic movements of the gut when he touched the exposed intestinal section with a crystal of sodium chlorid or injected a salt solution by means of a Pravaz syringe. Grützner thought the fact of this antiperistalsis a chief point as to the effect of nutritive enemas. His experiments were made on white mice, rabbits, guinea-pigs and cats, which had hungered for twenty-four hours. The injection mixtures consisted of a physiologic salt solution, with animal coal or starch or finely cut horse-hair or sawdust or poppy seeds. Four or six hours after the injection Grützner found the introduced particles in the stomach and in the entire course of the gut, except in the rectum. When, instead of salt solution, distilled water or a solution of .1 per cent. hydrochloric acid or of .6 per cent. potassium chlorid had been used, the introduced particles could not be discovered in the upper parts of the alimentary canal. Grützner at the same time took such precautionary measures that the animals could not have swallowed any excrements. The same positive results were found by him in experiments on man, in whose rectum he had injected starch emulsion.

Christomanos imitated these experiments and found that his researches corresponded to those of Grützner, if he followed the latter's method, but if he subjected the animals to extraordinary measures, such as severing and ligating the esophagus or fastening them down to the vivisection table for up to six hours, or applying the mouth-clamp, the experiments were negative. The latter series of experiments were made under rather pathologic conditions, and therefore can not prove what they seem to show. His experiments were made with carmin, Prussian blue, lycopodium dyed red or blue, and alcanna-oil, on white mice, rabbits, frogs, pigeons and men. Only two out of ten experiments made on men were positive; in these cases he used either lycopodium or bismuth subnitrate, but lycopodium is often unseen in the microscope, and the bismuth crystals are not always to be recognized as such, even if stained black through the abode in the intestines.

Dr. Swiezynski, in the clinic of Professor Riegel, tried the same kind of experiments on men and dogs. In 12 cases, unstained lycopodium had been introduced 7 times, in 6 instances in a physiologic salt solution; the 6 times were positive; in the seventh case 1 grain of lycopodium; in the eighth and ninth cases, lycopodium stained with nitrate of silver in a salt solution was used, and in both instances grains of lycopodium were found in the stomach. In 2 other cases lycopodium stained with gentian violet was introduced, once with sodium chlorid and with positive result; the other time without addition of salt was negative. In the twelfth case bismuth subnitrate was used; this experiment could not be regarded as absolutely positive. Six other experiments were made with gentian violet lycopodium, 4 times in sodium chlorid solution, and twice without the salt; these were more or less positive.

Dr. Dauber made 17 experiments on white mice, white rats, rabbits and dogs, with indigo or cinnabar; 6 experiments were positive, 11 negative, the positive result occurring in cases where animals were subjected to rather physiologic conditions; the 11 negative ones, I should think, were due to a too severe restraint, whereby the animals were subjected to a pathologic condition. The experiments on animals under physiologic but precautionary measures are, in my opinion, only proving if positive, and not disproving if negative. The chief proof must lie in the human experiment. Hemmeter regards this Grützner antiperistaltic motion as only a very feeble marginal ascending movement, effected by surface contact of the particles with the epithelium, which in turn is moved by the muscularis serosa; further, he says, it is never visible to the eye, and it is not

*Presented to the Section on Physiology and Dietetics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

capable of propelling food masses. Among the abnormal conditions that may cause this visible antiperistalsis, Nothnagel mentions solution of sodium chlorid and introduction of food at an unphysiologic entry, which in man we must consider the rectum. Hemmeter differentiates between two antiperistaltic motions, Grützner's physiologic marginal invisible antiperistalsis and Nothnagel's pathologic visible one. I can not see the difference between Grützner's and Nothnagel's antiperistaltic motions, as Grützner did what Nothnagel stated as a cause of a visible antiperistalsis, namely, the introduction of food at an unphysiological point of entry.

Hemmeter's opinion that food masses can not be propelled upward is not to be considered as entirely correct, as there are reports of undoubted propulsion of food masses. As early as 1827, Leslie reported a case of gastritis, in which on the fourth day an enema of turpentin and oil was rejected through the mouth; in 1857, Hall spoke on diaperistaltic and antiperistaltic action. Another case of antiperistalsis was reported by J. Frank, in 1883, where a nutrient enema was expelled by vomiting. Riegel joins Grützner and Swiezynski as to the positive result of the experiments and considers the antiperistaltic movements after injections into the rectum as proved.

As an antiperistalsis we have to regard the sensation of *globe hystérique*, and not so seldom nervous persons, especially women, complain of a sensation as if the bowels and stomach moved upward; it is true, as a rule, we consider these complaints as hysteric, i. e., often imaginary, while in other cases hysteric women tell us that they vomited excrements; even persons not nervous may tell the physician that they feel an upward motion in the intestines, which is followed by ructus.

The ruminating animals re-empty, physiologically, the contents of the rumen and reticulum into the mouth in order to swallow anew into the psalterium; pathologically we find regurgitation in certain cases of stomach disorders. Some of the animals of the lowest classes (celenteratæ) have the mouth and anus form one and the same opening, so that we have to assume that the excrements are propelled and evacuated by the same route through which food is ingested. Thus we learn by the way of comparative anatomy that antiperistaltic movements of the intestines are not impossible. In recent years a method of treatment of cholelithiasis consisted of oil enemas, and Blum observed that the oil migrates far up into the intestines till it comes in contact with the pancreatic juice, whereby the oil is saponified and thus becomes a cholagogue. In other cases of intestinal disorder, the same treatment with oil enemas has been used, and it is no doubt the covering of the mucous membrane rather than the possible absorption that has been said to have a curative effect; the same has been the case with enemas of solution of extract or infusion of whortleberries, of which I have seen good results in cases of enteritis.

In my above-mentioned experiments, for the injections I have used physiologic salt solutions, with additions of grape seeds, minute globules of tinfoil and kaolin granules, and regular nutritive enemas, to which I added dried whortleberries and oil with menthol. Grape seeds and whole whortleberries I thought suitable particles, because I knew that these pass the alimentary canal practically intact. I did not think the danger of possible inflammation of the vermiform process very great, because the foreign bodies are the last cause of appendicitis;* I should have liked to use the smallest aluminum globules, but not being able to obtain them, used the tinfoil. When using this it should be only such as is not adulterated with lead.

The experiments made are as follows:

Series 1.—To a healthy mulatto, 27 years old, the morning of April 14, 1898, after a movement of the bowels, three doses of calomel—3 grains each—in the course of three hours were given; two hours later, 1 table-spoonful of magnesium sulphate in ½ pint of warm water; during the afternoon there were six copious movements; no food of any kind was given, except water and whisky, and he had two evacuations during the night. On the following morning he received a cleansing soap and water enema, which was followed by two almost entirely watery evacuations; 1½ hours after this enema, 300 c.c. of a physiologic solution of sodium chlorid with the addition of twenty-five grape seeds were injected high up into the rectum—twenty inches—by a fountain syringe—Hegar's funnel, kept about 75 cm. above the body in the knee-elbow position; in order to have a very slow flow, I often compressed the tube; after injection, the mulatto had to take the left side position for one-half hour, and then he could take any position he liked; I thought he ought to be in the one a patient is supposed to assume when the nutritive enemas are administered. Soon he became rather hungry, as he had not taken any solid food for twenty-four hours. Five hours after the enema, I tried to introduce the stomach-tube, but he would not allow it; so at last I gave him a hypodermic injection of apomorphin and at the same time had him drink one-half pint of water with whisky; the effect was very prompt. He soon vomited a fluid of a slightly greenish yellow color, which he said was very bitter, and in this three grape seeds were discovered. He then took a hearty meal of meat, potatoes, spinach and beer.

During the following days, I persuaded him to allow the introduction of the stomach-tube, and I performed the second experiment on April 19. In the morning of this day, I washed his stomach out as much as possible, again gave him three doses of calomel, 3 grains each, and then a solution of Epsom salts; he had several movements during the day, but no food except water, whisky and beer. The following morning an injection of soap and water was given and followed very soon by an evacuation; an hour later an enema of physiologic salt solution mixed with twenty-five minute globules of tinfoil; 5½ hours later, I introduced the stomach-tube, and poured 1 pint of a solution of bicarbonate of soda through it, with the intention of loosening particles in the stomach that might be too much attached to the gastric mucosa. Then I let the water off and by washing for a longer time—I used about a gallon of warm water—I recovered four globules of tinfoil.

The third experiment, a few days later, was made by the same method, again using globules of tinfoil, but I recovered only one.

In the fourth experiment I used physiological salt solution and globules of tinfoil, but could not find any of the latter afterward.

In the fifth experiment, globules of tinfoil in distilled water were used, but none found later.

In the sixth experiment, using globules of tinfoil in physiologic salt solution, three globules were found.

Series 2.—The next experiments were made on the black-and-tan dog. He was very much attached to me, and I had trained him several tricks, among them to "lie down and be dead," and he would lie on his back with outstretched legs

* We have all heard of cherry stones, grape seeds, and many similar foreign bodies finding lodgment in the appendix vermiformis, but these are all foreign immigrants into the United States of Anatomy (N. Y. Med. Jour., May 26, 1900). Dr. J. Bauer says (Aerztlicher Verein in Munchen, Jan. 17, 1900, *Deutsche Med. Woch.*, May 10, 1900, *Vereinsbeilage* No. 18, p. 116): In connection with catarrh of the vermiform process fecal concretions may be formed; foreign bodies in the appendix do not exist; the fecal concretions may cause ulceration. Dr. O. Bollinger says (ibid.): The foreign bodies in the vermiform process are always fecal concretions. The vermiform process in the dog, very like that in man, is never diseased, though the dog swallows many foreign bodies.

for many minutes without moving. The dog hungered for twenty-four hours. I put a cloth-covered muzzle around his head and injected 100-150 c.c. of salt solution with the addition of grape seeds, globules of tinfoil, little granules of kaolin and Arminian bole into the rectum. I did not wish to kill the animal and so resorted to the hypodermic use of apomorphin. The before-mentioned mulatto willingly aided me in experimenting on the dog, which I tied very short. Seven experiments were made on this animal. Of 5 made with physiologic salt solution 4 proved positive, 1 negative. The sixth and seventh with distilled water, were negative.

Series 3.—I made the third series of experiments in August and September, 1899, in the course of treatment of a woman suffering from mechanical insufficiency of the stomach with a subacid condition (total acidity: Phenolphthalein, 24; HCl. .04 per cent., Toepfer). I excluded any food or drink by the mouth, and nutritive enemas were administered for eleven succeeding days; the result of the treatment was everything that could be wished for. The first enemas—all given in the knee-elbow position—were evacuated very soon, undoubtedly on account of the nervous condition of the patient. But from the third day on the remainder of the enemas were not expelled before five or six hours had passed; frequently no movement of the bowels followed from the evening to the morning. The quantity of the enema was 250 to 300 c.c. in general three times a day, in intervals of six to seven hours. The woman had been treated by lavage before she came under my treatment and was well used to the stomach tube. The enema itself consisted of a mixture of 250 c.c. of milk and cream, 2 eggs, 1 tablespoonful of a mixture of tropon and cornstarch and a pinch of sodium chlorid, and was brought up 15 to 22 inches into the rectum. A part of the treatment was also the injection of cottonseed-oil—250 c.c.—emulsified with oleic acid or rather sodium oleate (eunatrol). Several times, a few hours after the injection of the enemas the patient complained of eructations and a sensation of tasting eggs, other times tasting of grease or oil. These complaints induced me to start the experiment, the experimental additions being without the knowledge of the patient. To the nutriment enemas I added small, dried, uncooked whortleberries, which I knew would as a rule pass the alimentary canal quite unaffected by the digestive juices of the intestines. Four experiments were made and, by means of the stomach-tube, through which I introduced 1 quart of water, I twice recovered whortleberries; the other two times I could not discover any. Two experiments were made with oil emulsion, to which menthol—validol—was added. One time the patient noted a marked peppermint flavor, and both times I recovered, during lavage of the stomach, about 10 c.c. of the emulsified oil with a marked flavor of menthol. The stomach lavage occurred between five or six hours after the injection of the enema.

Reviewing the series of experiments, we find: One spontaneous experiment on a patient, 6 experiments on the mulatto, 7 experiments on the dog, 6 experiments on the woman patient—a total of 20. Of these 3 made with oil and 10 made with NaCl solution proved positive; 4 made with the latter solution proved negative, as far as the stomach is concerned, while 3 made with distilled water also proved negative.

The result of my experiments may be put down as positive in the meaning of Grützner, Swiezynski and Riegel. In this matter we can better understand the good effect of the nutritive enemas, especially when we consider cases in which patients have been nourished exclusively by rectal feeding, not only for days or weeks—among others, Donkin, up to 23 days; Boas, up to 14 days; D. D. Stewart, 23 days; the writer, 11 days—but also for months—Leube 6, and Riegel 10 months. The occasions of temporarily suspending the ingestion of food into the stomach are not too rare, particularly in cases of stenosis of the esophagus, cardia and pylorus, gastric ulceration and hemorrhage, certain poisonings, when the mucous membranes are destroyed, gastric hyper-irritation and dilatation of the stomach; besides these, rectal injections can be effectively used as carriers of medicine in cases of intestinal affections.

In conclusion, I should like to suggest to my colleagues that they make further experiments along this line, so that no doubt will prevail whether antiperistalsis is the rule or the exception.

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THE ETIOLOGY OF YELLOW FEVER.

AN ADDITIONAL NOTE.*

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At the Twenty-eighth Annual Meeting of the American Public Health Association,[1] held in Indianapolis, Ind., Oct. 22-26, 1900, we presented, in the form of a preliminary note, the results of our bacteriologic study of yellow fever, based on cultures taken from the blood in eighteen cases, at various stages of the disease, as well as on those which we had made from the blood and organs of eleven yellow fever cadavers. We also recorded the results obtained from the inoculation of eleven non-immune individuals by means of the bite of mosquitoes (culex fasciatus, Fabr.) that had previously fed on the blood of patients sick with yellow fever. We were able to report two positive results, in which the attack of yellow fever followed the bite of a mosquito within the usual period of incubation of this disease.

In one of these cases all other sources of infection could be positively excluded. From our several observations we drew the following conclusions: 1. Bacillus icteroides (Sanarelli) stands in no causative relation to yellow fever, but, when present, should be considered as a secondary invader in this disease. 2. The mosquito serves as the intermediate host for the parasite of yellow fever.

*Read at the Pan-Am. Med. Cong., held in Havana, Cuba, Feb. 4-7, 1901.

1. Phila. Med. Jour., Oct. 27, 1900.

Since the publication of our preliminary note, we have continued our investigations, especially as regards the means by which yellow fever is propagated from individual to individual, and as to the manner in which houses become infected with the contagium of this disease. The results already obtained are so positive and striking that, with the permission of Surgeon-General Sternberg, we have concluded to present to this Congress an additional note, in which we will record these later observations. We desire to here express our sincere thanks to the Military Governor of the Island of Cuba, Major General Leonard Wood, U. S. V., without whose approval and assistance these observations could not have been carried out.

In order to exercise perfect control over the movements of those individuals who were to be subjected to experimentation, and to avoid any other possible source of infection, a location was selected in an open and uncultivated field, about one mile from the town of Quemados, Cuba. Here an experimental sanitary station was established under the complete control of the senior member of this Board. This station was named Camp Lazear, in honor of our late colleague, Dr. Jesse W. Lazear, Acting Assistant-Surgeon, U. S. A., who died of yellow fever, while courageously investigating the causation of this disease. The site selected was very well drained, freely exposed to sunlight and winds, and, from every point of view, satisfactory for the purposes intended.

The personnel of this camp consisted of two medical officers, Dr. Roger P. Ames, Acting Assistant-Surgeon, U. S. A., an immune, in immediate charge; Dr. R. P. Cooke, Acting Assistant-Surgeon, U. S. A., non-immune; one acting hospital steward, an immune; nine privates of the hospital corps, one of whom was immune, and one immune ambulance driver.

For the quartering of this detachment, and of such non-immune individuals as should be received for experimentation, hospital tents, properly floored, were provided. These were placed at a distance of about twenty feet from each other, and were numbered 1 to 7 respectively.

Camp Lazear was established Nov. 20, 1900, and from this date was strictly quarantined, no one being permitted to leave or enter camp except the three immune members of the detachment and the members of the Board. Supplies were drawn chiefly from Columbia Barracks, and for this purpose a conveyance under the control of an immune acting hospital steward, and having an immune driver, was used.

A few Spanish immigrants recently arrived at the Port of Havana, were received at Camp Lazear, from time to time, while these observations were being carried out. A non-immune person, having once left this camp, was not permitted to return to it under any circumstances whatever.

The temperature and pulse of all non-immune residents were carefully recorded three times a day. Under these circumstances any infected individual entering the camp could be promptly detected and removed. As a matter of fact only two persons, not the subject of experimentation, developed any rise of temperature; one, a Spanish immigrant, with probably commencing pulmonary tuberculosis, who was discharged at the end of three days; and the other, a Spanish immigrant, who developed a temperature of 102.6 F. on the afternoon of his fourth day in camp. He was at once removed with his entire bedding and baggage and placed in the receiving ward at Columbia Barracks. His fever, which was marked by daily intermissions for three days, subsided upon the administration of cathartics and enemata. His attack was considered to be due to intestinal irritation. He was not permitted, however, to return to the camp.

No non-immune resident was subjected to inoculation who had not passed in this camp the full period of incubation of yellow fever, with one exception, to be hereinafter mentioned.

OBSERVATIONS.

Having thus sufficiently indicated the environment of Camp Lazear and the conditions under which its residents lived, we will now proceed to a narration of the observations thus far made at this experimental station. At the time these inoculations were begun, the several tents were occupied as follows: Tent No. 1 by 1 immune and 1 non-immune; No. 2 by 1 immune and 2 non-immunes; No. 3 by 2 immunes; No. 4 by 3 non-immunes; No. 5 by 3 non-immunes; No. 6 by 2 non-immunes; and No. 7 by 1 non-immune.

For the purpose of experimentation subjects were selected as follows: from Tent No. 2, 2 non-immunes, and from Tent No. 5, 3 non-immunes. Later, 1 non-immune in Tent No. 6 was also designated for inoculation.

CASE 1.—Private John R. Kissinger, Hospital Corps, U. S. A., aged 23, a non-immune, occupant of Tent No. 2, with his full consent, was bitten at 10.30 a. m., Nov. 20, 1900, by a mosquito —C. fasciatus—that had bitten a severe case of yellow fever on the fifth day, eleven days previously; another severe case on the third day, six days before, and a third severe one on the third day, three days before. As Kissinger had not absented himself from Columbia Barracks for a period of more than thirty days, it was considered safe to inoculate him without waiting for his period of incubation to pass.

Nov. 23, 1900, Kissinger was again bitten by the same mosquito. The result of both inoculations was negative. The mosquito, therefore, was incapable of conveying any infection on the eleventh or fourteenth day after it had bitten a severe case of yellow fever on the third day of the disease. This insect had been kept at ordinary room temperature and died November 26, 1900.

Dec. 5, 1900, at 2 p. m., twelve days after the last inoculation, Kissinger was again bitten by five mosquitoes—C. fasciatus—two of which had bitten fatal cases of yellow fever, on the second day, fifteen days before; one a severe case on the second day, nineteen days previously, and two a mild case on the third day, twenty-one days before.

The record of temperature and pulse, taken every three hours, following this inoculation, showed that the subject remained in his usual state of health during the following three days, except that on December 8, on the third day, Kissinger had slight vertigo, upon rising, which soon passed away. At 4.30 p. m.—commencement of fourth day—he complained of frontal headache; otherwise he felt well and partook of supper with appetite; at 9 p.m., temperature was 98.4 F., pulse 90; at 11.30 p. m., he awoke with a chill, his temperature 100 F., pulse 90; he complained of severe frontal headache and backache; his eyes were injected and his face suffused. December 9 at 3 a. m., his temperature was 102 F., pulse 102; he had violent headache and backache with nausea and vomiting. He was then removed to the yellow fever wards. His subsequent history was that of a case of yellow fever at moderate severity. Albumin appeared in the urine on the fourth day, increased to one-fifth by volume on the sixth day and disappeared on December 22. Granular casts were present in considerable numbers from the fourth to the eighth day. The conjunctivæ were jaundiced on the third day. The diagnosis of yellow fever in this case was made by Drs. Juan Guitéras, Carlos Finlay, W. C. Gorgas, and A. Diaz Albertini, the board of yellow fever experts of the city of Havana, who saw the patient on several occasions during his illness. (See Chart I.) The period of incubation in this case was 3 days, 9½ hours.

CASE 2.—John J. Moran, aged 24, an American, non-immune occupant of Tent No. 2, with his full consent, was bitten at 10 a. m., Nov. 26, 1900, by a mosquito—C. fasciatus—which twelve days before had bitten a case of yellow fever of moderate severity, on the third day of the disease. This insect had also bitten a well-marked case of yellow fever—second day—ten days previously.

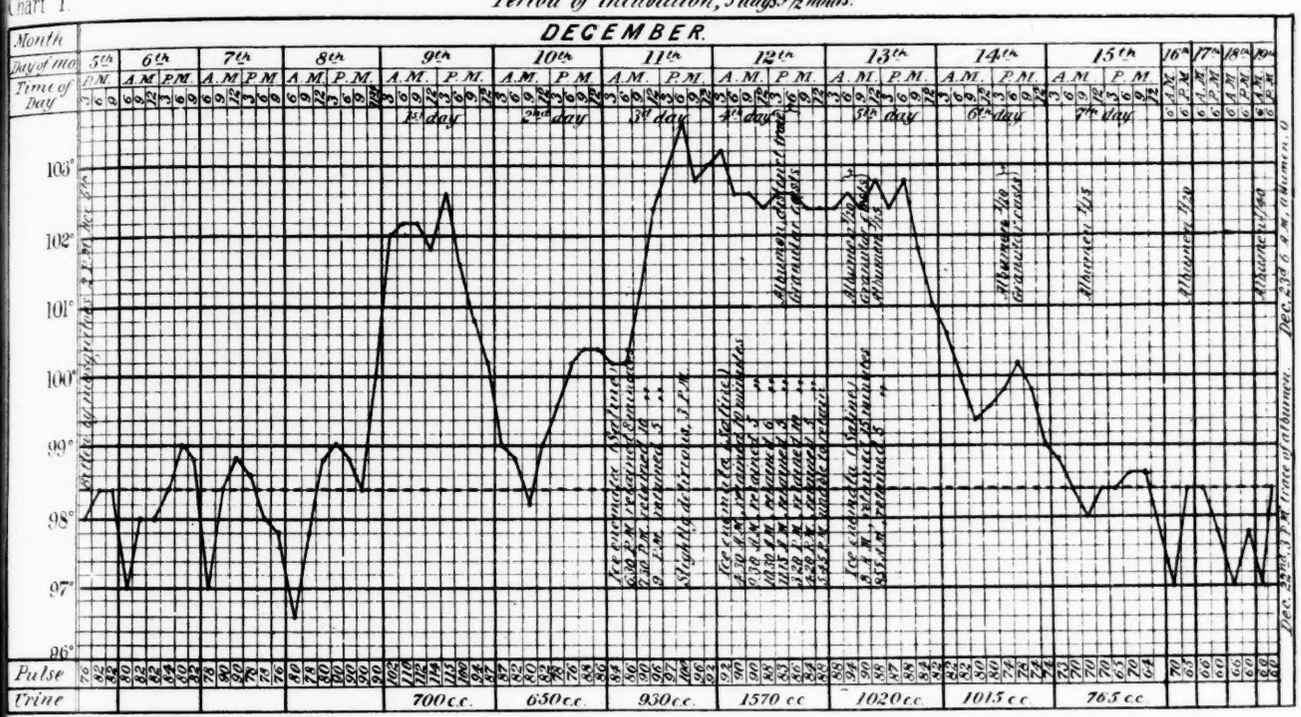
CASE 3.—A Spanish immigrant, aged 26, a non-immune occupant of Tent No. 5, with his full consent, was bitten at 4 p. m., Dec. 8, 1900, by four mosquitoes—C. fasciatus—which had been contaminated as follows: one by biting a fatal case of yellow fever, on the third day, seventeen days before; one a severe one, on the third day, eighteen days before; one a severe case, on the second day, twenty-two days before, and one a case of moderate severity, on the third day, twenty-four days previously.

The record of temperature and pulse, taken every three hours after the inoculation, shows no rise of temperature above 99 F. until 6 p. m., December 13, on the sixth day, when 99.4 F. is recorded; pulse 68. The subject, who was of a very lively

Yellow fever, produced by the bite of Culex fasciatus

Period of incubation, 3 days 9½ hours.

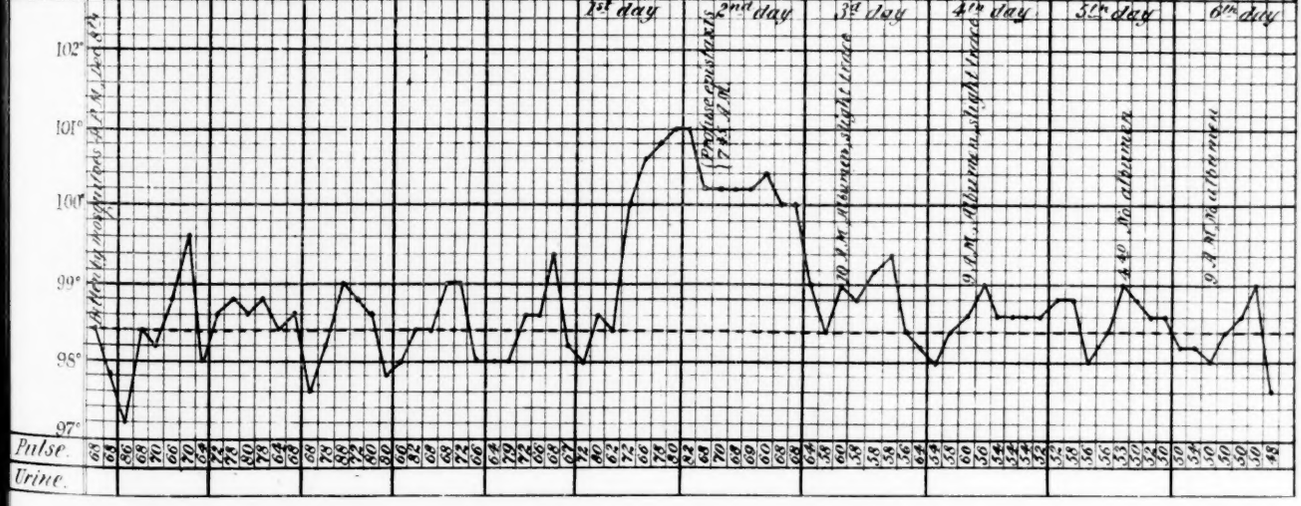
Chart I.



Yellow fever, produced by the bite of Culex fasciatus.

Period of incubation, 4 days 20 hours.

Chart II.



November 29, at 2.20 p. m., Moran was again bitten by the same mosquito. The result of both of these inoculations was negative. This insect was, therefore, incapable of conveying the infection fifteen days after having bitten a case of yellow fever of moderate severity on the third day, and thirteen days after it had bitten a well-marked case of this disease on the second day. This mosquito had been kept at room temperature. Moran's case will be again referred to when we come to speak of the infection of a building by means of contaminated mosquitoes.

disposition, retained his usual spirits until noon of the 13th, although he complained of slight frontal headache on the 11th and 12th. He took to his bed at noon of the 13th, the fifth day, complaining of increased frontal headache and a sense of fatigue. At 9 p. m., his temperature was 98.2 F., pulse 62.

December 14, at 6 a. m., temperature was 98 F., pulse 72, and he still complained of frontal headache and general malaise. Profuse epistaxis occurred at 7.45 a. m.; at 9 a. m., temperature was 99.6 F... pulse 80; at 1.15 p. m., temperature was 100 F., pulse 80, and he complained of a sense of chilliness, with frontal headache increased, and slight pain in the back, arms and legs; at 3 p. m., temperature was 100 F., pulse 80; at 4.15 p. m., temperature 100.7 F., pulse 68; his face flushed and eyes congested. He was removed to the yellow fever wards. A trace of albumin was found in the urine passed at 3.30 p. m., December 15; a few hyaline cases were present. He was seen at this time by the Havana board of experts and the diagnosis of mild yellow fever confirmed. (See Chart No. 2.)

The period of incubation in this case was four days and twenty fours, counting from the time of inoculation to the hour when the patient took to his bed; if reckoned to the onset of fever, it was 5 days and 17 hours.

CASE 4.—A Spanish immigrant, aged 27, a non-immune occupant of Tent No. 5, with his full consent, was bitten at 10 a.m., Nov. 26, 1900, by a mosquito—C. fasciatus—which had bitten a severe case of yellow fever, on the second day, ten days before. Three days later, November 29, he was again bitten by the same insect. December 2, after an interval of three days, he was again bitten by the same insect, and also by a second mosquito—C. fasciatus—which, twelve days before, had been contaminated by biting a fatal case of yellow fever on the third day. No unfavorable effects followed any of these attempted inoculations. The first-mentioned mosquito, therefore, was incapable of conveying any infection on the seventeenth day after biting a severe case of yellow fever on the second day; the other also failed to infect on the twelfth day after biting a fatal case of yellow fever on the third day. Both of these mosquitoes had been kept at ordinary room temperature.

December 9, after an interval of seven days, the subject was again bitten, at 10.30 a. m., by one mosquito—C. fasciatus—which had been infected nineteen days before by biting a fatal case of yellow fever on the second day of the disease. He remained in his usual health until 9 a.m., December 12, the third day, when he complained of frontal headache; his temperature was 98.8 F., pulse 96. This headache continued during the entire day. At 6 p.m., temperature was 99 F., pulse 94; at 9 p. m., temperature 99 F., pulse 84; at 9.30 p. m., temperature 99.4 F., pulse 82. Severe headache and backache was complained of; his eyes were injected and his face suffused. The following morning he was sent to the yellow fever wards. Urine passed at 4.20 p. m., December 15, the third day, gave a distinct trace of albumin. Many hyaline casts were present on the same date. The conjunctivæ were jaundiced on the third day.

The patient was seen by the board of experts on December 14, and the diagnosis of yellow fever made. (See Chart No. 3.)

The period of incubation in this case was 3 days, 11½ hours.

CASE 5.—A Spanish immigrant, aged 26, a non-immune occupant of Tent No. 5, with his full consent, was bitten at 10 a.m., Nov. 26, 1900, by a mosquito—C. fasciatus—that had bitten a well-marked case of yellow fever, on the third day, twelve days before. November 29 he was again bitten by the same insect. December 2 he was for the third time bitten by two mosquitoes—C. fasciatus—both of which had bitten a well-marked case of yellow fever, on the third day, eighteen days before. As no bad results followed any of these inoculations, it follows that these mosquitoes were incapable of conveying any infection eighteen days after they had bitten a well-marked case of yellow fever on the third day. Both of these insects had been kept at room temperature.

December 11, after an interval of nine days, the subject was again, at 4:30 p.m., bitten by the same mosquitoes, four in number, that had been applied to Case 3, three days prior to this time, with positive results.

The record of temperature and pulse, taken every three hours following the inoculation, showed no change till December 13, the second day, at 9 a.m., when the temperature was 99 F., and the pulse 78. From this hour till 6 p.m. the temperature varied from 99.2 to 99.6 F. The subject complained of frontal headache, slight in degree, during the entire day. At 9 p.m. his temperature was 98.4 F., pulse 62.

December 14, the third day, he complained of slight frontal headache during the entire day, and was indisposed to exertion. From 6 a.m. to 6 p.m. the temperature averaged 99.2 F., and the pulse varied from 64 to 90; at 9 p.m. it was 98.4 F., the pulse 78. December 15, the fourth day, at 6 a.m., temperature was 98.2 F., pulse 78. He still had frontal headache. At 9 a.m., temperature was 99.2 F., pulse 80; at 12, noon, the former was 99.2 F., the pulse 74. The subject now went to bed, complaining of headache and pains throughout the body. At 2 p.m., the temperature was 100 F., the pulse 80; eyes much congested; face flushed. At 6 p.m. his temperature had risen to 102 F., and the pulse to 90. He was then transferred to the yellow fever wards. Albumin appeared in the urine at 7:30 a.m., December 17. Bleeding from the gums and roof of the mouth occurred on the sixth and seventh days of his illness.

This case was examined by the board of experts on the 16th and 19th, and the diagnosis of yellow fever made.

Albumin disappeared on the sixth day, the temperature falling to normal on this date, and remaining near this point till December 23, the ninth day of sickness, when a relapse occurred, attended with bleeding from the gums on December 24 and 25, with the appearance of red blood cells and pus cells in the urine in moderate numbers. Fever subsided on December 26, and the urine became normal on December 29. (See Chart iv.)

The period of incubation in this case, if reckoned from the time of inoculation to the hour when the patient took to his bed, was 3 days, 19½ hours.

The four patients whose histories we have given above were also examined by a number of physicians of Havana, among whom we may mention Dr. Bango, of "La Covadonga," Dr. Sanchez, of "La Benéfica," and Dr. Moas, of "La Purissima Concepcion," by all of whom the diagnosis of yellow fever was confirmed. Let us now rapidly review the circumstances attending these cases of experimental yellow fever, in order to emphasize certain points of interest and importance in connection with their occurrence. (We omit any reference to the clinical histories.)

It should be borne in mind that at the time when these inoculations were begun, there were only 12 non-immune residents at Camp Lazear, and that 5 of these were selected for experiment, viz., 2 in Tent No. 2, and 3 in Tent No. 5. Of these we succeeded in infecting 4, viz., 1 in Tent No. 2 and 3 in Tent No. 5, each of whom developed an attack of yellow fever within the period of incubation of this disease. The one negative result, therefore, was in Case 2—Moran—inoculated with a mosquito on the fifteenth day after the insect had bitten a case of yellow fever on the third day. Since this mosquito failed to infect Case 4, three days after it had bitten Moran, it follows that the result could not have been otherwise than negative in the latter case. We now know, as the result of our observations, that in the case of an insect kept at room temperature during the cool weather of November, fifteen or even eighteen days would, in all probability, be too short a time to render it capable of producing the disease.

As bearing upon the source of infection, we invite attention to the period of time during which the subjects had been kept under rigid quarantine, prior to successful inoculation, which was as follows: Case 1, fifteen days; Case 3, nine days; Case 4, nineteen days; Case 5, twenty-one days. We further desire to emphasize the fact that this epi-

demic of yellow fever, which affected 33.33 per cent. of the non-immune residents of Camp Lazear, did not concern the 7 non-immunes occupying Tents No. 1, 4, 6 and 7, *but was strictly limited to those individuals who had been bitten by contaminated mosquitoes.*

Nothing could point more forcibly to the source of this infection than the order of the occurrence of events at this camp. The precision with which the infection of the individual followed the bite of the mosquito left nothing to be desired in order to fulfill the requirements of a scientific experiment.

The epidemic having ceased on Dec. 15, 1900, no other case of yellow fever occurred in this camp until we again began to expose individuals to inoculation. Thus fifteen days later we made the following observation:

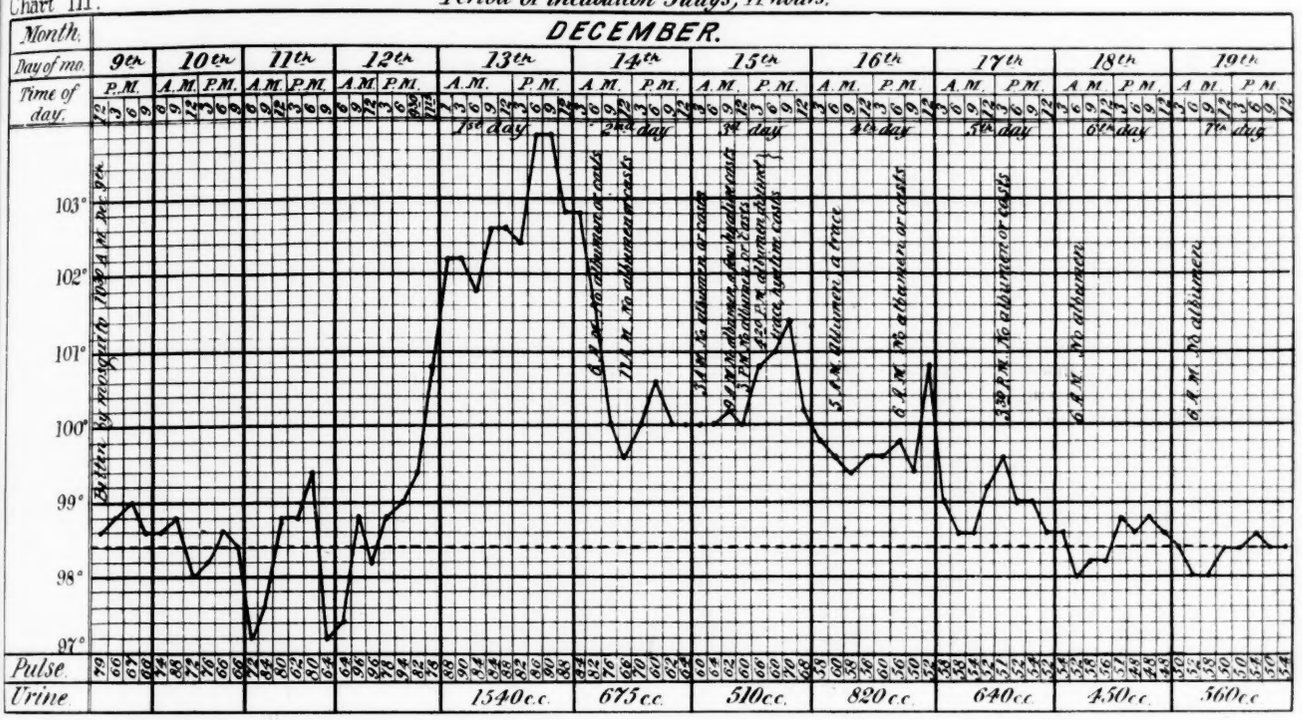
CASE 6.—A Spanish immigrant, aged 27, a non-immune occupant of Tent No. 6, with his full consent, was bitten at 11 a.m., Dec. 30, 1900, by four mosquitoes—C. fasciatus—that had been contaminated seventeen days previously by biting a mild case of yellow fever on the first day of the disease (Case 4). These insects had been kept at a temperature of 82 F.

The subject remained in his normal condition until the evening of Jan. 2, 1901, the third day, when he complained of frontal headache. At 6 p.m., his temperature was 99 F., pulse 64. He slept well, but still complained of headache on the following morning, January 3. He partook sparingly of breakfast, and afterward lay on his bed, being disinclined to exert himself. At 9 a.m., the temperature was 99 F., the pulse 96; at 10:30 a.m., temperature 100 F., pulse 80. A sense of chilliness and sharp frontal headache was complained of, and at 3 p.m. his temperature was 100.8 F., his pulse 89, and his eyes were congested and face flushed. He was removed to the yellow fever wards. A specimen of urine passed at midnight, January 4, contained a distinct trace of albumin. Slight bleeding from the gums occurred on the fifth and sixth days. The patient was seen by the board of experts on the second and seventh days of his attack, and the diagnosis of yellow fever confirmed. (See Chart v.)

The period of incubation in this case was three days, 22½ hours. The subject had remained in strict quarantine for twenty-two days preceding his inoculation.

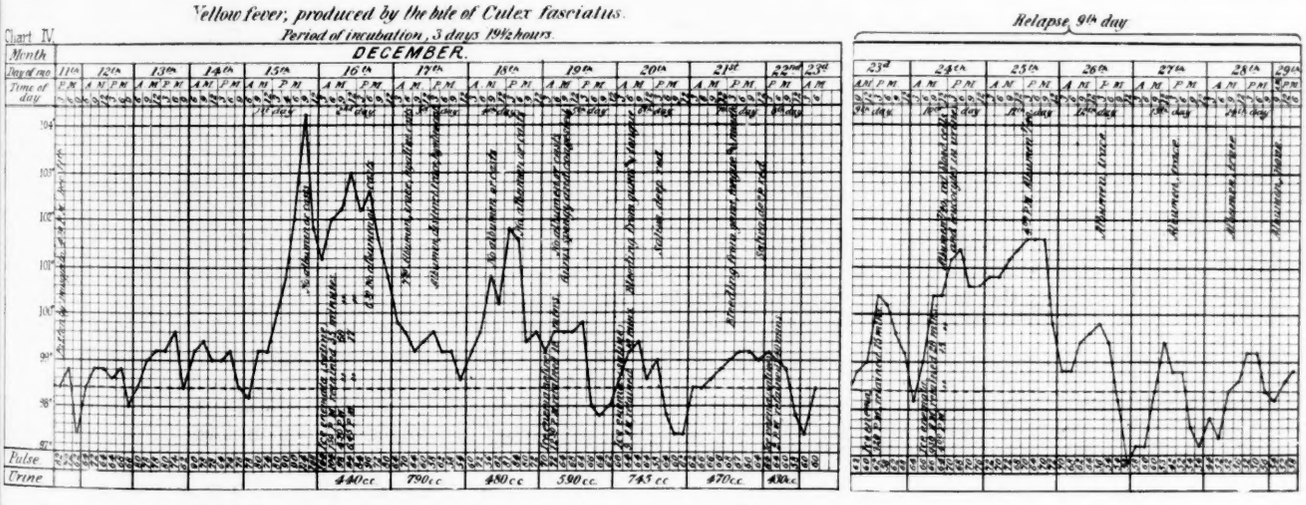
Yellow fever produced by the bite of Culex fasciatus.

Chart III. *Period of incubation 3 days, 11 hours.*


Month. DECEMBER.
Day of mo. 9th 10th 11th 12th 13th 14th 15th 16th 17th 18th 19th
Time of day.
1st day 2nd day 3rd day 4th day 5th day 6th day 7th day
Bitten by mosquito 11 A.M. Dec. 30.
103° 102° 101° 100° 99° 98° 97°
Pulse.
Urine. 1540 c.c. 675 c.c. 510 c.c. 820 c.c. 640 c.c. 450 c.c. 560 c.c.

Yellow fever; produced by the bite of Culex fasciatus.

Chart IV. *Period of incubation, 3 days 19½ hours.*



In considering the character of the attacks and the course of the disease in these five cases of experimental yellow fever, it must be borne in mind that these infected individuals were all young men, in good general physical condition and placed amid excellent hygienic surroundings. Further, it must not be forgotten that, upon the earliest manifestation of an approaching infection, they were each and all put to bed at once, and were even carried to the yellow fever wards while occupying the same bed. In other words, these men were kept at absolute rest from the first inception of the disease. Just what bearing this may have had on the subsequent course of the fever, we can not say, but since so much stress is laid on absolute rest of the patient by those having most experience in the treatment of yellow fever, the influence of this enforced rest, in our cases, upon the subsequent course of the attack, was doubtless of much importance. We reserve a consideration of the clinical side of these cases for a future report.

In our opinion the experiments above described conclusively demonstrate that an attack of yellow fever may be readily induced in the healthy subject by the bite of mosquitoes—C. fasciatus—which have been previously contaminated by being fed with the blood of those sick with yellow fever, provided the insects are kept for a sufficient length of time after contamination before being applied to the person to be infected.

Our observations do not confirm Finlay's statement that the bite of the mosquito may confer an abortive attack of yellow fever, when applied to the healthy subject two to six days after it has bitten a yellow fever patient. We have always failed to induce an attack, even of the mildest description, when we have used mosquitoes within less than twelve days from the time of contamination, although the insects were constantly kept at summer temperature. We could cite instances where we have applied mosquitoes at intervals of two, three, four, five, six, nine, and eleven days following the contamination of the insect with the blood of well-marked cases of yellow fever, early in the disease, without any effect whatever being produced by the bite. Thus in one case no result followed the bite of fourteen mosquitoes which four days previously had been contaminated by biting a case of yellow fever on the first day. Again, seven days later, or eleven days after contamination, the surviving seven of these insects failed to infect an individual. On the seventeenth day after contamination, however, the bite of four of these mosquitoes—all that remained of the original fourteen—was promptly followed by an attack of yellow fever in the same individual. These insects had been kept, during the whole of this time, at an average temperature of 82 F.

Our observations would seem to indicate that after the parasite has been taken into the mosquito's stomach, a certain number of days must elapse before the insect is capable of re-conveying it to man. This period doubtless represents the time required for the parasite to pass from the insect's stomach to its salivary glands, and would appear to be about twelve days in summer weather, and most probably about eighteen or more days during the cooler winter months. It follows, also, that our observations do not confirm Finlay's opinion that the bite of the contaminated mosquito may confer immunity against a subsequent attack of yellow fever. In our experience, an individual may be bitten on three or more occasions by contaminated mosquitoes without manifesting any symptoms of disturbance to health, and yet promptly sicken with yellow fever within a few days after being bitten by an insect capable of conveying the infection.

ACQUIREMENT OF THE DISEASE.

Having shown that yellow fever can be conveyed by the bite of an infected mosquito, it remains to inquire whether this disease can be acquired in any other manner. It has seemed to us that yellow fever, like the several types of malarial fever, might be induced by the injection of blood taken from the general circulation of a patient suffering with this disease. Accordingly we have subjected four individuals to this method of infection, with one negative and three positive results. Reserving the detailed description of these cases to a subsequent occasion, we may state that in one of the positive cases, an attack of pronounced yellow fever followed the subcutaneous injection of 2 c.c. of blood taken from a vein at the bend of the elbow, on the first day of the disease, the period of incubation being three days and twenty-two hours; in the second case, 1.5 c.c. of blood, taken on the first day of the disease, and injected in the same manner, brought about an attack within two days and twelve hours; while in our third case, the injection of 0.5 c.c. of blood taken on the second day of the disease, produced an attack at the end of forty-one hours.

In the case mentioned as negative to the blood injection, the subsequent inoculation of this individual with mosquitoes already proved to be capable of conveying the disease, also resulted negatively. We think, therefore, that this particular individual, a Spanish immigrant, may be considered as one who probably possesses a natural immunity to yellow fever.

It is important to note that in the three cases in which the injection of the blood brought about an attack of yellow fever, careful cultures from the same blood, taken immediately after injection, failed to show the presence of Sanarelli's bacillus.[2]

Our observations, therefore, show that the parasite of yellow fever is present in the general and capillary circulation, at least during the early stages of this disease, and that the latter may be conveyed, like the malarial parasite, either by means of the bite of the mosquito, or by the injection of blood taken from the general circulation.

CAN YELLOW FEVER BE PROPAGATED IN ANY OTHER WAY?

We believe that the general consensus of opinion of both the medical profession and the laity is strongly in favor of the conveyance of yellow fever by fomites. The origin of epidemics, devastating in their course, has been frequently attributed to the unpacking of trunks and boxes that contained supposedly infected clothing; and hence the efforts of health authorities, both state and national, are being constantly directed to the thorough disinfection of all clothing and bedding shipped from ports where yellow fever prevails. To such extremes have efforts at disinfection been carried, in order to prevent the importation of this disease into the United States, that, during the epidemic season, all articles of personal apparel and bedding have been

2. A fourth case of yellow fever, severe in type, has been produced by the subcutaneous injection of 1 c.c. of blood taken from the general circulation on the second day of the disease, the period of incubation being three days and one hour. The patient from whom the blood was obtained was an experimental case which was in turn produced by the injection of blood—0.5 c.c.—derived from a non-experimental case of fatal yellow fever. As "controls," Cases 1, 4, 6 and 7 of this report were also injected subcutaneously with 1 c.c. of the same blood without manifesting any symptoms whatever. The blood which produced this fourth case of yellow fever, when transferred at the same time to bouillon tubes in considerable quantities, gave no growth whatever.

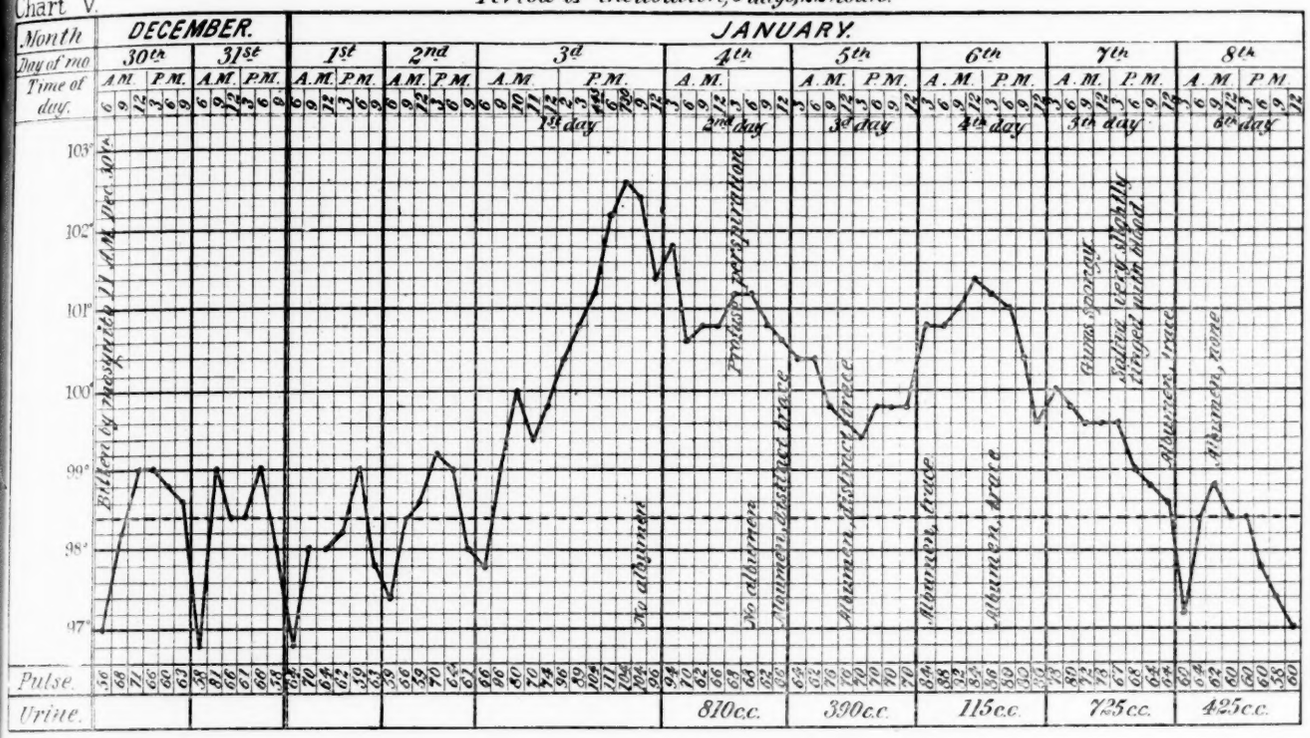
subjected to disinfection, sometimes both at the port of departure and at the port of arrival; and this has been done whether the articles have previously been contaminated by contact with yellow fever patients or

To determine, therefore, whether clothing and bedding, which have been contaminated by contact with yellow fever patients and their discharges, can convey this disease is a matter of the utmost importance.

Yellow fever, produced by the bite of Culex fasciatus.

Period of incubation, 3 days, 22 hours.

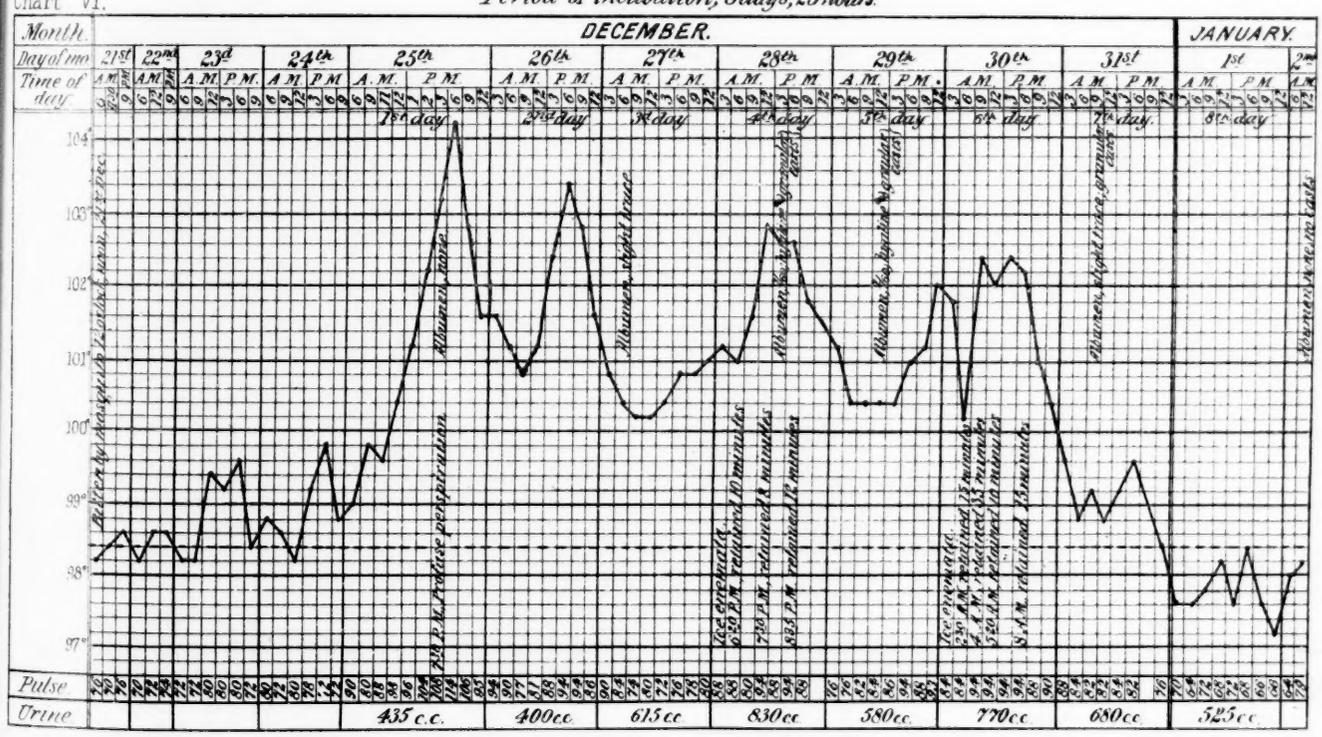
Chart V.



Yellow fever, produced by the bite of Culex fasciatus.

Period of incubation, 3 days, 23 hours.

Chart VI.



not. The mere fact that the individual has resided, even for a day, in a city where yellow fever is present, has been sufficient cause to subject his baggage to rigid disinfection by the sanitary authorities.

Although the literature contains many references to the failure of such contaminated articles to cause the disease, we have considered it advisable to test, by actual experiment on non-immune human beings, the

theory of the conveyance of yellow fever by fomites, since we know of no other way in which this question can ever be finally determined.

For this purpose there was erected at Camp Lazear a small frame house consisting of one room 14x20 feet, and known as "Building No. 1," or the "Infected Clothing and Bedding Building." The cubic capacity of this house was 2800 feet. It was tightly ceiled within with "tongue and grooved" boards, and was well battened on the outside. It faced to the south and was provided with two small windows, each 26x34 inches in size. These windows were both placed on the south side of the building, the purpose being to prevent, as much as possible, any thorough circulation of the air within the house. They were closed by permanent wire screens of .5 mm. mesh. In addition sliding glass sash were provided within and heavy wooden shutters without; the latter intended to prevent the entrance of sunlight into the building, as it was not deemed desirable that the disinfecting qualities of sunlight, direct or diffused, should at any time be exerted on the articles of clothing contained within this room. Entrance was effected through a small vestibule, 3x5 feet, also placed on the southern side of the house. This vestibule was protected without by a solid door and was divided in its middle by a wire screen door, swung on spring hinges. The inner entrance was also closed by a second wire screen door. In this way the passage of mosquitoes into this room was effectually excluded. During the day, and until after sunset, the house was kept securely closed, while by means of a suitable heating apparatus the temperature was raised to 92 to 95 F. Precaution was taken at the same time to maintain a sufficient humidity of the atmosphere. The average temperature of this house was thus kept at 76.2 F. for a period of sixty-three days.

Nov. 30, 1900, the building now being ready for occupancy, three large boxes filled with sheets, pillow-slips, blankets, etc., contaminated by contact with cases of yellow fever and their discharges were received and placed therein. The majority of the articles had been taken from the beds of patients sick with yellow fever at Las Animas Hospital, Havana, or at Columbia Barracks. Many of them had been purposely soiled with a liberal quantity of black vomit, urine, and fecal matter. A dirty "comfortable" and much-soiled pair of blankets, removed from the bed of a patient sick with yellow fever in the town of Quemados, were contained in one of these boxes. The same day, at 6 p.m., Dr. R. P. Cooke, Acting Assistant-Surgeon, U. S. A., and two privates of the hospital corps, all non-immune young Americans, entered this building and deliberately unpacked these boxes, which had been tightly closed and locked for a period of two weeks. They were careful at the same time to give each article a thorough handling and shaking in order to disseminate through the air of the room the specific agent of yellow fever, if contained in these fomites. These soiled sheets, pillow-cases and blankets were used in preparing the beds in which the members of the hospital corps slept. Various soiled articles were hung around the room and placed about the bed occupied by Dr. Cooke.

From this date until Dec. 19, 1900, a series of twenty days, this room was occupied each night by these three non-immunes. Each morning the various soiled articles were carefully packed in the aforesaid boxes, and at night again unpacked and distributed about the room. During the day the residents of this house were permitted to occupy a tent pitched in the immediate vicinity, but were kept in strict quarantine.

December 12, a fourth box of clothing and bedding was received from Las Animas Hospital. These articles had been used on the beds of yellow fever patients, but in addition had been purposely soiled with the bloody stools of a fatal case of this disease. As this box had been packed for a number of days, when opened and unpacked by Dr. Cooke and his assistants, on December 12, the odor was so offensive as to compel them to retreat from the house. They pluckily returned, however, within a short time and spent the night as usual.

December 19 these three non-immunes were placed in quarantine for five days and then given the liberty of the camp. All had remained in perfect health, notwithstanding their stay of twenty nights amid such unwholesome surroundings.

During the week, December 20-27, the following articles were also placed in this house, viz.: pajamas suits, 1; undershirts, 2; night-shirts, 4; pillow-slips, 4; sheets, 6; blankets, 5; pillows, 2; mattresses, 1. These articles had been removed from the persons and beds of four patients sick with yellow fever and were very much soiled, as any change of clothing or bed-linen during their attacks had been purposely avoided, the object being to obtain articles as thoroughly contaminated as possible.

From Dec. 21, 1900, till Jan. 10, 1901, this building was again occupied by two non-immune young Americans, under the same conditions as the preceding occupants, except that these men slept every night in the very garments worn by yellow fever patients throughout their entire attacks, besides making use exclusively of their much-soiled pillow-slips, sheets and blankets. At the end of twenty-one nights of such intimate contact with these fomites, they also went into quarantine, from which they were released five days later in perfect health.

From January 11 till January 31, a period of twenty days, "Building No. 1" continued to be occupied by two other non-immune Americans, who, like those who preceded them, have slept every night in the beds formerly occupied by yellow fever patients and in the night-shirts used by these patients throughout the attack, without change. In addition, during the last fourteen nights of their occupancy of this house they have slept, each night, with their pillows covered with towels that had been thoroughly soiled with the blood drawn from both the general and capillary circulation, on the first day of the disease, in the case of a well-marked attack of yellow fever. Notwithstanding this trying ordeal, these men have continued to remain in perfect health.

The attempt which we have therefore made to infect "Building No. 1," and its seven non-immune occupants, during a period of sixty-three days, has proved an absolute failure. We think we can not do better here than to quote from the classic work of La Roche.[3] This author says: "In relation to the yellow fever, we find so many instances establishing the fact of the non-transmissibility of the disease through the agency of articles of the kind mentioned, and of merchandise generally, that we can not but discredit the accounts of a contrary character assigned in medical writings, and still more to those presented on the strength of popular report solely. For if, in a large number of well authenticated cases, such articles have been handled and used with perfect impunity—and that, too, often under circumstances best calculated to insure the effect in question—we have every reason to conclude, that a contrary result will not be obtained in other instances of a sim-

3. R. La Roche: Yellow Fever, vol. ii, p. 516, Philadelphia.

ilar kind; and that consequently the effect said to have been produced by exposure to those articles, must—unless established beyond the possibility of doubt—be referred to some other agency.

The question here naturally arises: How does a house become infected with yellow fever? This we have attempted to solve by the erection at Camp Lazear of a second house, known as "Building No. 2," or the "Infected Mosquito Building." This was in all respects similar to "Building No. 1," except that the door and windows were placed on opposite sides of the building so as to give through-and-through ventilation. It was divided, also, by a wire-screen partition, extending from floor to ceiling, into two rooms, 12x14 feet and 8x14 feet respectively. Whereas, all articles admitted to "Building No. 1" had been soiled by contact with yellow fever patients, all articles admitted to "Building No. 2" were first carefully disinfected by steam before being placed therein.

On Dec. 21, 1900, at 11.45 a.m., there were set free in the larger room of this building fifteen mosquitoes—C. fasciatus—which had previously been contaminated by biting yellow fever patients, as follows: 1, a severe case, on the second day, Nov. 27, 1900, twenty-four days; 3, a well-marked case, on the first day, Dec. 9, 1900, twelve days; 4, a mild case, on the first day, Dec. 13, 1900, eight days; 7, a well-marked case, on the first day, Dec. 16, 1900, five days—total, 15.

Only one of these insects was considered capable of conveying the infection, viz., the mosquito that had bitten a severe case twenty-four days before; while three others—the twelve-day insects—had possibly reached the dangerous stage, as they had been kept at an average temperature of 82 F.

At 12, noon, of the same day, John J. Moran—already referred to as Case 2 in this report—a non-immune American, entered the room where the mosquitoes had been freed, and remained thirty minutes. During this time he was bitten about the face and hands by several insects. At 4.30 p.m., the same day, he again entered and remained twenty minutes, and was again bitten. The following day, at 4.30 p.m., he, for the third time, entered the room, and was again bitten.

CASE 7.—On Dec. 25, 1900, at 6 a.m., the fourth day, Moran complained of slight dizziness and frontal headache. At 11 a.m. he went to bed, complaining of increased headache and malaise, with a temperature of 99.6 F., pulse 88; at noon the temperature was 100.4 F., the pulse 98; at 1 p.m., 101.2 F., the pulse 96, and his eyes were much injected and face suffused. He was removed to the yellow fever wards. He was seen on several occasions by the board of experts and the diagnosis of yellow fever confirmed. (See Chart 6.)

The period of incubation in this case, dating from the first visit to "Building No. 2," was three days and twenty-three hours. If reckoned from his last visit it was two days and eighteen hours. There was no other possible source for his infection, as he had been strictly quarantined at Camp Lazear for a period of thirty-two days prior to his exposure in the mosquito building.

During each of Moran's visits, two non-immunes remained in this same building, only protected from the mosquitoes by the wire-screen partition. From Dec. 21, 1900, till Jan. 8, 1901, inclusive—eighteen nights—these non-immunes have slept in this house, only protected by the wire screen partition. These men have remained in perfect health to the present time.

December 28, after an interval of seven days, this house was again entered by a non-immune American, who remained twenty-five minutes. The subject was bitten by only one insect. The following day he again entered and remained fifteen minutes, and was again bitten by one mosquito. The result of these two visits was entirely negative. As the mortality among the insects in this room, from some unknown cause, had been surprisingly large, it is possible that the subject was bitten by insects not more than thirteen days old, in which case they would probably not infect, since they had been kept for only five days at a temperature of 82 F., and for eight days at the mean temperature of the room, 78 F.

Be this as it may, nothing can be more striking or instructive as bearing upon the cause of house infection in yellow fever, than when we contrast the results obtained in our attempts to infect Buildings No. 1 and No. 2; for whereas, in the former *all* of seven non-immunes escaped the infection, although exposed to the most intimate contact with the fomites for an average period of twenty-one nights each; in the latter, an exposure, reckoned by as many minutes, was quite sufficient to give an attack of yellow fever to one out of two persons who entered the building—50 per cent.

Thus at Camp Lazear, of 7 non-immunes whom we attempted to infect by means of the bites of contaminated mosquitoes, we have succeeded in conveying the disease to 6, or 85.71 per cent. On the other hand, 7 non-immunes whom we tried to infect by means of fomites, under particularly favorable circumstances, we did not succeed in a single instance. Out of a total of 18 non-immunes whom we have inoculated with contaminated mosquitoes, since we began this line of investigation, 8, or 44.4 per cent., have contracted yellow fever. If we exclude those individuals bitten by mosquitoes that had been kept less than twelve days after contamination, and which were, therefore, probably incapable of conveying the disease, we have to record eight positive and two negative results—80 per cent.

CONCLUSIONS.

1. The mosquito—C. fasciatus—serves as the intermediate host for the parasite of yellow fever.

2. Yellow fever is transmitted to the non-immune individual by means of the bite of the mosquito that has previously fed on the blood of those sick with this disease.

3. An interval of about twelve days or more after contamination appears to be necessary before the mosquito is capable of conveying the infection.

4. The bite of the mosquito at an earlier period after contamination does not appear to confer any immunity against a subsequent attack.

5. Yellow fever can also be experimentally produced by the subcutaneous injection of blood taken from the general circulation during the first and second days of this disease.

6. An attack of yellow fever, produced by the bite of the mosquito, confers immunity against the subsequent injection of the blood of an individual suffering from the non-experimental form of this disease.

7. The period of incubation in thirteen cases of experimental yellow fever has varied from forty-one hours to five days and seventeen hours.

8. Yellow fever is not conveyed by fomites, and hence disinfection of articles of clothing, bedding, or merchandise, supposedly contaminated by contact with those sick with this disease, is unnecessary.

9. A house may be said to be infected with yellow fever only when there are present within its walls contaminated mosquitoes capable of conveying the parasite of this disease.

10. The spread of yellow fever can be most effectually controlled by measures directed to the destruction of mosquitoes and the protection of the sick against the bites of these insects.

11. While the mode of propagation of yellow fever has now been definitely determined, the specific cause of this disease remains to be discovered.

[For discussion see p. 461.]

THE METRIC SYSTEM.*

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"Frenchmen have beheaded their king, declared there is no God, and are now trying to enforce the metric system!" said a member of the English parliament in the course of an alleged argument against the system. This is a fair sample of the arguments advanced against it. It is not my purpose to make any extended argument in favor of it, taking it for granted that THE ASSOCIATION is already, theoretically at least, converted to it. If there are any who are still in doubt upon the subject, I ask them to consider the following résumé:

The system is recommended: 1, because it is simple; 2, it saves time; a good authority on the subject estimates that its employment would save one year of school life for each child; 3, it is cosmopolitan; 4, it is scientific; 5, it is in use in the United States Coast Survey Service, in the Marine-Hospital Service and in the U. S. Navy.

Against its use are the following considerations: 1, it discards an old and familiar system; 2, it is impossible to forget the old system; 3, the accuracy of the standard meter has been questioned by some mathematicians.

Leaving the question here, I propose to consider its present status in the medical profession, and suggest some measures that would hasten its general adoption. Although legalized in 1866, and advocated by a very large majority of the scientific men of the country, a very small number of medical men make use of it to-day. After a somewhat extended investigation in regard to its use in Boston and vicinity, I am of the opinion that Whelply, of St. Louis, was entirely safe when he made the statement in Washington recently that 5 per cent. or less of those writing prescriptions to-day employ the decimal notation.

An inquiry regarding the standing of the men using the metric system was universally answered by the statement that they are the leading men in the profession. So I am inclined to think that while numerically the percentage is perhaps disappointingly small, if we consider quality rather than quantity the showing is quite satisfactory. And when we consider the radical nature of the change, and that natural inertia of which we are all more or less victims, perhaps we shall agree that the progress is as great as we could reasonably expect.

What can we do as individuals to increase this percentage? First, learn to think in the new system, and teach others to do the same. Just so long as we spend our time comparing the new system with the old, and devising rules for their easy interconversion, just so long shall we make slow progress. The equivalent of a grain in terms of the new system is, in my judgment, enough to remember, and when the new system is fully established, forget even that.

There are, besides this individual action, three important factors that would help to a solution of the problem. Let the Association of Medical Colleges and the Pharmaceutical Association, and the Association of Dental Schools, insist that hereafter no one shall receive a degree either in medicine, dentistry or pharmacy, until he has a working knowledge of the system. Let all three associations urge on the writers of text-books the exclusive use of the system. Let the manufacturers of pharmaceutical products label their packages exclusively in the new system. If these conditions could be fulfilled, a tremendous stride would be made toward the universal use of the metric system. Of these three propositions, I am inclined to think the latter is the most important. So universal has become the use of tablets, that if they were all labeled as suggested, almost every practicing physician would be taking daily lessons. In talking with drug houses on this subject, they say if it could be brought about by general agreement, it would be a good thing, but if one or two firms only should adopt the plan, loss of trade is feared. E. R. Squibb & Sons have for many years adopted this method, and the firm deserves much credit, not only for this, but for their persistent and intelligent presentation of the subject in their publications.

DISCUSSION.

DR. E. H. BARTLEY, of New York City, by invitation, opened the discussion. He has been using the metric system in writing his prescriptions for twenty years, and adopted a prescription blank with a vertical line near the right hand margin, to take the place of the decimal point. To the left of this line he had printed "gram," and, to the right, "milligram," and is in the habit of filling out all the three places, if necessary, using ciphers. He uses only these two denominations. He thinks the use of the terms centigram and decigram is confusing and unnecessary and they ought to be dropped. Having been a chemist before he studied medicine, he has learned to use the metric system, prefers it for prescription writing, and has always used it. He has learned the doses of remedies in the English system, and has continued to do so because it is difficult to carry in the mind the doses in two different systems and it increases the danger of errors. He thinks it much safer, for the present at least, to carry in the mind the dosage in grains and minims and make the conversion at the time of writing the prescription. This is very easy if we adopt the plan of always writing for two, three, or four ounces. When he first began writing prescriptions, he learned a rule which has worked very well, viz.: In 60 c.c., or ʒii, the number of grams to be written for will equal the number of grains or minims of the active ingredient in each teaspoonful of the mixture. Thus, if you wish to give ten grains of iodid of potassium at a dose, you would write

Potassii iodidi	10.000
Aquæ q. s. ad	60.000

M. ft. sol. To be given in dram doses.

Each dram contains ten grains of the salt. This prescription contains fifteen doses. In a three-ounce mixture, or 90 c.c., the number of grams to be taken would be 1½ times the dose, and in a four-ounce mixture, 120 c.c., it would be double the dose, in grains, in each dram, or just equal to it if the dose be increased to two drams, or a dessertspoonful.

As regards the liability of mistakes on the part of the pharmacist in dispensing a prescription written in metric form, he has only twice in twenty years, had a pharmacist make a mistake in the quantity prescribed. In one case the pharmacist put in double the quantity of water ordered, and the patient got less than the prescribed dose, and the other was similar to it. But the danger of this is getting less every year. The pharmaceutical schools now make the use of the metric system compulsory with their students, so that all druggists will soon be familiar with it, and the danger, from their side, will become extremely small. The dangers even now are very little from that source. The only one is that arising from physicians

*Presented to the Section on Materia Medica, Pharmacy and Therapeutics, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

attempting to translate from one system to the other; but by adopting the method just described, there can be very little danger from that side.

PROF. JOS. P. REMINGTON, Philadelphia—With regard to the remark just made about teaching the metric system in pharmaceutical schools, in the College of Pharmacy of Philadelphia, the metric system is used almost exclusively. In the laboratory work no other is used. One point raised in the paper was the question of competency of the pharmacist and his liability to error: every educated pharmacist throughout the country would fill the prescriptions in the metric system just as well as by the old method. In 1890, the United States Pharmacopeia introduced in its liquid formulæ the metric system, so that the use of this system is extending. The great difficulty is in getting physicians to abandon the old and take up the new. In Germany, the matter was regulated by law and physicians were given one year in which to learn the metric system, and were obliged to use it thereafter; but we can not adopt such summary methods in this country.

DR. FRANK WOODBURY, Philadelphia, said that he thought that the decimal point and the ciphers repelled many physicians, and the adoption of the plan of writing quantities in grams, centigrams and milligrams in whole numbers, without the use of the decimal point, might greatly assist the transition from the old to the new and reduce the liability to error.

DR. J. N. UPSHUR, Richmond, Va., wished to say very emphatically that what Dr. Wheatley said about the indolence of old doctors is true; in this connection, he was much impressed with the truth of the saying that you can not teach an old dog new tricks. Speaking for himself, he did not believe that he could learn that metric system, and carry it into effect in writing his prescriptions, without killing somebody. At the same time he urges his students to learn the metric system. His son, who uses it in the U. S. Marine-Hospital Service, complains of the unprogressiveness of the druggists in his locality, which compel him to write his prescriptions for his private patients in the old system.

DR. F. G. WHEATLEY, in closing, said that the point raised that the writing of ciphers constituted an objection was not very practical. His own method is to only keep two denominations in mind, the grams and the centigrams, just as we have dollars and cents. Notwithstanding what had just been said, he thinks that it is the physicians who are at fault in this matter. The druggists who have graduated during recent years say that when they graduated they knew nothing about any other system than the metric, but they had to learn the old method on account of the prescriptions received. The fault lies with the teachers in the medical colleges. As long as the text-books teach both systems, the average physician will learn the old and leave the new.

EVOLUTIONAL AND INVOLUTIONAL TYPES OF MENTAL AND NERVOUS DISEASE.*

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The different epochs of life are factors of great moment both in the production and in the exacerbation of nervous instability. They are rarely passed through, even in the most healthy individual, without some psychical or physical manifestation. Each crisis in life determines new impulses, new thought, and new actions, which give each epoch a distinct physiology and psychology. We purpose to discuss in this paper the effect these periods have upon the brain and nervous constitution, considering chiefly the minor and transient disorders influenced or excited by them, and to attempt to explain the preventive measures necessary and advisable, possible and ideal, which may determine their development. The territory that we especially wish to cover shades insensibly into the two extremes, mental soundness and mental disease. This borderland is especially important on acount of the fact that the psychoses as a rule gradually pass through a prodromic stage of nervous instability or one of recedent psychical action instead of being ushered in or terminated abruptly. Such conditions are psychopathic, but can not be grouped under the psychoses *sensu strictiori*. There is no disease which does not alter the mental state of the patient, nor is there any one whose physical state is not influenced by his mental condition. We desire to emphasize this point, as it illustrates a common law of cause and effect present in many disorders. The brain then controls the body just as much as physical states influence the mental. Each successive epoch adds a new burden upon the nervous system, and in unstable individuals it is only a question of time until the inherited instability reveals itself. The types of each period differ according to the intensity and rapidity of incidence and the physical manifestations. Nevertheless the disturbances do not include any disorder which can not be caused by other factors also. As an etiologic classification, however, we are justified in grouping them in this manner.

In childhood inherited strain is rarely noticed. At this period there is great difficulty in determining what is physiologic and what is psychologic. For instance, every experienced mother knows that a child does not always reveal a tired condition by a desire to sleep and a feeling of listlessness, but often by excitability and restlessness. When irritability and peevishness is observed as a result of physical exhaustion, we must regard it as evidence of the influence of physical states upon mental conditions, though it is natural and not pathologic. When threats of whipping, etc., are added to this, we find an artificially produced nervous instability with conditions of anxiety predominating, expressed by night terrors, loss of appetite, restlessness, etc

Mental exhaustion may, however, without any such stimulus as whipping, terminate in diseased over-exhaustion. Here also irritability is the chief sign, but it is more marked than in the common evening exhaustion or is accompanied by other phenomena, particularly if a nervous taint is inherited. The child becomes quarrelsome, envious and imperious, or is timid and anxious, awkward and easily moved to tears. It tires easily, but does not sleep readily, tosses around, emits a shrill cry in its sleep, or talks to itself and does not awake refreshed as do normal children. These symptoms are too often looked upon as being due to gastric disturbances, without any efforts being made to combat them, and are allowed to take their course. It is unmistakably a diseased type of exhaustion, expressed in a transient disturbance of physical and mental functions.

Another condition at this period, due to inherited strain, is morbid depression. Children of this type are always reserved and gloomy, precocious and hypersensitive. In some this condition only exists in the early morning for a short time after awakening. This transient depression or melancholy is the precursor of melancholia in the adult.

We have in childhood different dislikes identical with those in adults, but which are often mistakenly supposed to be natural in children.

A child who may have been bathed many times before without evincing any signs of fear, may suddenly

* Presented to the Section on Nervous and Mental Diseases, at the Fifty-first Annual Meeting of the American Medical Association, held at Atlantic City, N. J., June 5-8, 1900.

become restless when immersed, crying and drawing up its legs, as if in pain. It may be due to many causes and always demands investigation. More easily recognized and more common is the fear of being alone. In some, of course, this is due to the mother or nurse spoiling the child, but in others it comes on suddenly without any such cause and may be indicative of some general nervous disorder. Fear of strangers is also not always physiologic. Every physician can probably recall some child formerly friendly to him who suddenly became fretful and cried at his approach, who steadily refused to allow him to touch it, and in time acted similarly to all except its mother, the latter being compelled to stay with it constantly until as suddenly as it came, the fear vanished.

The best known form of infantile fear is pavor nocturnus. As this is generally so pronounced as to be a true psychosis, it will only be lightly touched upon. The onset of the nervous storm in such children can generally be predicted. Such a child is paler than usual, more irritable, can not go to sleep unless its mother is with it, and awakes as soon as she attempts to leave. Close observation will reveal some muscular twitchings, which increase in intensity, until suddenly the outburst comes on, during which the child may even be in a condition of transient mania. Nightmare must, however, not be confused with these night terrors.

Transient exaltation of spirits is common in children. Anticipation of the slightest pleasure will make its eyes sparkle, make it become restless and babble incessantly, cause it to laugh unceasingly and act somewhat as does an adult under the influence of alcohol. Parents generally stand complacently observing it and do not seek to repress this unnatural excitation until suddenly the picture changes. The child becomes listless, cries, and upon being taken to bed tosses about, and after it has gone to sleep, awakes frequently with a cry of anxiety.

A child who has inherited a neurotic constitution is generally below the normal weight and is apt to be precocious. Even the laity is apt to be suspicious of a too bright mind in a frail body. It may be due to malnutrition, rachitis, etc., or to the fact that the parents are small in stature and that the psychic life has simply been developed too early. But most often a neurotic taint is back of it.

Single nervous symptoms observed at this period are senseless laughter, a staring look, twitchings of the facial muscles, spasms, both local and general, stammering and stuttering, and strabismus. These symptoms may occur particularly during teething. A healthy child generally teethes without trouble. But when the nervous resistance is congenitally weak, the physical strain makes excessive demands upon the nervous system whose instability then manifests itself. Such children reveal their "nervousness" in other ways. Their facial color may rapidly change from bloom to pallor, they vomit easily, cry in their sleep, are domineering, early learn to comprehend spoken language and have pronounced retentive powers. Such symptoms reveal a nervous temperament. When in addition we find stubbornness, viciousness and perverse habits, as instinctive masturbation, it reveals an inherited taint in addition to a nervous temperament. When we also find the so-called stigmata of degeneration, we are dealing with a case of congenital degeneration. No single symptom, however, proves anything; it is only by a combination of symptoms that we can determine such conditions. As the child grows older, other neurotic manifestations may come on. These include a marked and unexplainable anemia, nervous snuffling, peculiar stubborn headaches and slight variations of character, mentation and habits occurring periodically.

The older the child is the more diverse are the conditions found, environmental influences being added to the autochthonous. This is the period of life when hypochondriac ideas, excessive desire for order and cleanliness and even religious exaltation first become evident.

The earlier the signs of nervous disturbance occur, the more frequent and pronounced they are, the more probable is the belief that they are due to congenital degeneration. It is natural, therefore, to find the hereditary ataxias and muscular atrophies, Thompson's disease (toxemic?) at this period of life.

The next period of life, the school or prepubescent age, is very similar, except that the physiologic and pathologic states are more difficult to separate. Emotion is no longer supreme, the muscular system now asserts itself, and the faculty of judgment and cognition comes into play. Children at this age are able to facilitate as well as to hinder the development of their faculties and parents may consciously or unconsciously inculcate bad habits in their children by example or by improper methods of training and discipline. Chorea, "insanity of the muscles," is the type of motor disturbance and is found at this age; also petit mal, unconscious automatism or somnambulism, and migraine. The brain is now rapidly developing and the cortex is asserting itself. Muscular impulses dominate the scene and hence the nervous disorders are largely muscular.

The signs of degeneration noticed are flat-pointed teeth, hacking cough, a capricious appetite, and a scanty urine. The objective signs are slowness in movement, stooping, and twitching. We can at this age already observe a tendency to neurasthenia or hysteria, one child having hysteric tendencies, another neurasthenic.

In this period the influence of school-life is the most important factor. Incomplete development, undue sensitiveness, excessive restlessness, the frequent and perplexing changes from one room and teacher to another with entirely different methods, the exactions demanded by educators in their senseless rivalry, the anxiety attendant upon competition for prizes, etc., have a harmful result upon the pupils. There are, of course, some advantages in our system. A timid child becomes accustomed to association with strangers, peculiarities are influenced and often repressed through the ridicule of classmates, improper home training is counteracted, the energy of a child is turned into a particular channel, an irregular life is made methodical, carefulness tends to replace carelessness, etc. But under our present system, where the mental capacity of all children is regarded as equal, and the mental energy is drained to the last drop, in accordance with the forcing process now in vogue, which uses up all reserve power and inhibits the growth of other parts of the brain and prevents the preparation of the body for the momentous crises of life which are yet to come, all the advantages are multiplied. "There is no time nor place of organic repentance provided by nature for some of the sins of the schoolmaster."

The next period of life embraces puberty and adolescence. We include these two epochs in one because they are so intimately associated, one being the termination of the other. Before this time boys and girls are much alike, they are not very different sexually, mentally, or physically; then they gradually develop sex-

ally, and finally mentally; the boy comes to use his dgment and reasoning powers more and more, and e girl becomes more impulsive and emotional. This not an abrupt change, but is only accomplished after e lapse of some years. The emotions of a girl up to r 21st year are not stable or deep-seated and are soon rgotten; her conversation only then becomes coherent, r actions womanly. A boy becomes manly at about is 24th year, commences then to become precise and ttled and deliberate.

Inasmuch as this is the period when the mind devel-s, it follows that inherited mental characteristics ould now show themselves, perhaps for the first time, more strongly than before. This is, then, the time hen we expect hysteria and hemicrania, epilepsy, nate immorality and arrested development, to show hemselves. Clouston includes acne, ugliness, many orms of impaired vision, and perhaps phthisis and cute rheumatism as neuroses of this period, but why I do not see. Eccentricity and incompatibility of temper, xual aversion and religious asceticism, decrease of voli-ional power, reveal themselves during this period. Many of the first convictions for crime are in those of he adolescent age.

Many diverse factors now come into play. The com-t with the outer world begins in earnest; the ability or self-culture and self-responsibility increases; pro-uction replaces acquisition. The transition from child-ood to this period in woman occurs with the interac-ion of certain periodical changes which strongly influ-nce the mind. These may come on early or late. It s an unfavorable sign if they come on long after the evelopment of the mind. The effects of an improper ducation, sexual desires, the emotional development ith its alternate display of fear, hope, and disappoint-ent, the indulgence in religious contemplation, the stering of egotism and self-introspection, the ex-austion attendant upon the exacting duties of social fe with its balls, theaters and parties, the daily tyran-izing of an overstrict and zealous father, with perhaps ompulsory attendance at church and forced restraint n all daily actions, are the forces at work at this period. The onset of a hysteric attack can often be traced to the reparation for confirmation. In males this is the age hen sexual abuse and alcoholism assert their sway nd play havoc with the system. The strain of making p new functions is such a burden that it takes little ore to upset the system.

The next period, that of adult life, including preg-ancy, lactation and parturition in woman is a moment-us one. This is a time of trial to a female, even though he is not congenitally predisposed to instability. Re-production of the species, although it is the duty of omen, is likewise a menace to her health. Pregnancy enerally evokes mental depression, irresistible longings, ritability, foolish jealousy, anxiety, etc. Hysteric symp-oms are also prone to occur at this time. Similar occur-nces take place in childbirth and lactation. Chorea nd hebephrenia are also common during this time. n the male, family cares, business worries; political, hurch and social duties; alcoholism and syphilis, and usiness speculation combine to keep up a ceaseless erebral congestion. Neurasthenia is for this reason he nervous disease of adult manhood. We may find lso eccentricities of character, curious habits, recurrent ttacks of depression or of forced gaiety, and in luetic ndividuals the syphilitic nervous diseases.

Suppression of the menses in females causes many ervous symptoms, particularly stupor, listlessness and headache. Illicit intercourse generally produces pathologic mental changes in woman and if children are begotten the shame and distress often suffice to produce a transient mania.

With the cessation of the power for reproduction, vital energy is lessened. Unstable nervous systems are just as apt to be upset by the process of decadence as they were in their development. The body loses in weight, the circulation slows up, the lymphatic and arterial systems commence to degenerate, the emotions quiet down, the imaginative power disappears, the mental processes alter, etc. These changes do not take place quickly, but cover some years. In woman the disappearance of menses is not coincident with the climacteric. We may find in females at this period, supersensitiveness, sleeplessness, depression of spirits, different phobias and general apathy, and in both sexes, various trophic disturbances. In men the climacteric is not as definite or as complete and occurs later and more gradually than in women. The mental alterations are therefore rarely as pronounced, irritability and a transient depression of spirits are all that is noticed. This is the time of life when cerebral hemorrhage and encephalomalacia are prone to occur.

Physiologic senility is not only slow and insidious in its onset, but has no set time for its occurrence. In general we may say that it commences when atheroma and arcus senilis comes on. Boy-Tessir well says that "the coefficient of the organic faculties varies for each individual. Each by reason of his lessened organic resistance carries from birth a certain predisposition to disease, that is to say, a special grouping of lessened organic resistance upon which depend the time of the appearance of senescence." All functions suffer except that of reproduction, which answers to laws of its own. The springy step, the elastic frame, the lustrous hair, the quick mind become things of the past. The process of thought, though still deliberate and accurate, becomes less rapid, and the association paths seem to become less responsive to the will. The organs become sluggish in action and more susceptible to disease; co-ordinated movements are more difficult; all thoughts, tastes, habits approach again those of youth.

Senility becomes abnormal, according to Clouston, if hereditary cerebral weakness exists, if the brain has been overtaxed, or if its blood-vessels become diseased. Motor impairment is characteristic of this period, revealing itself in paralysis agitans and similar disorders. The melancholia which is often observed is not a "conscious sensitive mental pain, but an automatic motor misery." In others again we find a transient mania due to sudden alterations of the cerebral circulation and to vasomotor paralysis.

Senile abnormalities are however, when not so pronounced as these three types, difficult to distinguish from the physiologic occurrences of senility, because the latter themselves consist in mental and motor changes which at other times of life would be considered abnormal. The senile speech so characteristic of this period, the loss of ideation and of affection, the lessened memory and concentration of thought which are found in physiologic senility, render it difficult to draw appropriate conclusions. But in general, when excessive volubility, desire for unfit marriages, peculiar perversities of temper, wandering tendencies and restlessness—the normal senile always desires rest—indifference, carelessness in habits and hypochondriacal ideas are found, we can regard senescence as having exceeded its physiologic limits.

DISCUSSION.

DR. GREGG, Hollins, Va.—I wish to express my own peculiar views in regard to what was said in connection with the evolution of nervous disease from its mental aspect. I have never believed in mental evolution. I can conceive of no evolution of mind, but only of organic evolution. I can conceive of nervous evolution. I can understand brain development; improvement of the various centers of the brain. I understand improvement in the intellectual centers of the brain, the psychic centers; but I can not understand any evolution, or impairment or advancement in mind, and I believe we often confound mental and cerebral functions. I can understand how machinery can be perfected for the application of the power of electricity, and a very ordinary machine can be converted into a very fine machine, but this would not be the evolution of electricity.

DR. EDWARD E. MAYER—I confess my inability to exactly understand the gentleman; it seems to me that he is indulging in a play of words. I wish that he would exactly define what he means by mental functions and by cerebral functions. He assuredly has not in mind the old metaphysical views on this question. The mental functions must certainly develop with the development of the mind. The mind of a child is perfectly blank, and to a certain extent we can write on it what we wish. The older it becomes, the more developed its brain is; the more receptive is its mind. The doctor's comparison with a machine is rather inappropriate in our estimation. We are not dealing with material actions or products, but with chemic and vital forces. At the present day, metaphysical abstractions are certainly not in place among a body of physicians.

ANASTOMOSIS OF THE URETERS WITH THE INTESTINE.

A HISTORICAL AND EXPERIMENTAL RESEARCH.*

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The experimental work forming the basis of this article was undertaken with the view of studying the changes resulting from anastomosing the ureters with the intestinal tract, and of determining whether the procedure could with safety be employed in human beings. The labors of other experimenters in this field have abundantly demonstrated that in dogs, at least, the large bowel can be employed as a receptacle for urine and the animal have good control over its anal sphincter, and liquid feces be evacuated at regular intervals without resulting proctitis. But the more important and far-reaching changes in the kidneys and ureters, resulting from the bacterial invasion from the septic cavity into which the ureteral orifices open, has not been satisfactorily studied.

Will infection of the kidney invariably follow its ureteral union with the intestine? If this be true, can perfection of operative technique reduce this infection to a minimum, so that the kidney can recover and remain a useful organ? To the thoughtful, conscientious surgeon these questions are paramount, and must be carefully answered before he decides to subject his patient to an operation from which, once performed, there is no retreat.

My work, as the title indicates, has been in two directions: First, I have carefully, and I trust exhaustively, gone over the literature of the subject. This was a task of considerable magnitude, as some of the cases were hidden away in transactions or obscure reports. In many instances the original had been quoted incorrectly and the error handed down from one writer to another. In most instances the abstracts have been made from the original sources, or, at least, the original has been gone over carefully to verify the abstract. I have endeavored to arrange the material in such a form as to be of service to future investigators.

The second portion of the article is devoted to my own experiments, from which, together with the work of others, my general conclusions are drawn.

From a historical standpoint Richardson's[83] case merits the first consideration, since it is the only one of its kind on record. The case was reported in the "Philosophical Transactions" in the year 1713, and is as follows:

"One John Woosnape, of North Bierly, a poor boy, lived till he was 17 years of age and never made water, and yet was very healthy, vigorous, and active. He had constantly diarrhea on him, but without much uneasiness. The obstruction must have been in the kidneys, for he never had any inclination to make water. The serous part of the blood, which should have been thrown off by the urine, was discharged by the celiac and mesenteric arteries by the mediation of the glands into the guts. He died of a fever."

It is certainly difficult to decide from this report whether the author actually saw or only heard of the case. At any rate, from a scientific standpoint it is practically useless, and certainly does not warrant the deduction that the human being can live seventeen years with a blending of the urinary and intestinal tracts. Yet, after a mention of the cloaca in certain animals, and deducing from this that the same condition may be produced in man and be compatible with life, certain writers have endeavored to clinch the argument by referring to Richardson's case. That some of them have never read the original is apparent, from the fact that the reference is incorrectly given.

ANIMAL EXPERIMENTS IN URETERO-INTESTINAL ANASTOMOSIS.

Can the results of animal experimentation with uretero-intestinal anastomosis be used to advantage in establishing the place of the operation in human surgery?

In a general way this query can be answered in the affirmative. In spite of the technical difficulties of the operation in an animal, such as the dog, it is possible to so perfect the technique as to greatly reduce the primary mortality, and the same may be said of the operation in man. Gross errors in technique should not be counted in determining the value of the operation either in animals or human beings. While it may be true, as claimed by some, that the human kidney is a more highly developed organ than is that of the dog, it is true only to a limited extent that its power of resisting infection is thereby greater.

Various objections to animal experimentation as a test of the value of uretero-intestinal implantation in man have been raised, but they can not be said to be upheld by facts. Certainly the upright or prone position can have absolutely no influence on the action of the colon bacillus in producing an ascending pyelonephritis. A septic cavity, such as the rectum, is filled with myriads of these bacteria, and no action of gravity or the mere flushing out of this cavity can make it aseptic to any appreciable degree. Nor is it at all probable that the colon bacillus in the dog's rectum is any more virulent than the same germ in the human intestine.

Yet all these theories have been advanced to explain the cause of the failures on the experimenter's part. A careful study of the literature of the subject as well as the results of my own experimental work have con-

* Read before the American Gynecological Society, Washington, D. C., May 1, 1900.

vinced me that identical changes take place in both animals and man when the ureters are anastomosed with the intestinal tract. Hence, I have by means of brief abstracts placed the work of other experimenters in this field in such a form as to be readily available to the student of the subject.

GLÜCK AND ZELLER,[7] 1881. *Four dogs; both ureters in rectum; death from peritonitis from giving way of sutures.* Uretero-intestinal anastomosis in animals dates from the attempts of these experimenters to implant the ureters in the rectum after removal of the bladder in dogs. Different methods of disposal of the ureters were studied. They succeeded in saving a number of animals where the ureters, either alone or with the trigonum, were fastened in the abdominal incision, but the attempts to anastomose the ureters with the rectum were complete failures. In these last experiments, after removal of the bladder and careful hemostasis, the rectum was incised for 3 or 4 cm. and both ureters secured in the incision by a row of Lembert's sutures. In all four dogs operated on the sutures gave way, with resulting peritonitis and urinary infiltration. In the case of one dog, which lived four days, it is noted that the evacuations were thin and mixed with the urine.

BARDENHAUER,[1] 1886. *Single ureter implanted extraperitoneally in five dogs, with three recoveries; uretero-intestinal stenosis; dilatation of ureters, hydronephrosis, pyelitis, and pyonephrosis.* Bardenhauer experimented on five dogs by exposing extraperitoneally the ascending and descending colon and corresponding ureters. The ureter was then divided and drawn over a curved needle. The needle was made to penetrate the posterior wall of the colon and brought out again 1.5 cm. below the point of entrance. The bowel was invaginated at the site of the puncture and the ureter held in place by sutures, which united the borders of the invaginated portion. The end of the ureters which presented at the deeper opening was cut off and slipped back into the lumen of the bowel and the second opening closed by suture. The operation is mentioned as difficult, owing to the thinness of the ureteral walls, yet in three cases was successful. Two of the surviving animals were killed after four weeks. The union of the ureter with the rectum was perfect, but at the site of the operation there was cicatricial contraction, together with dilatation of the ureters and hydronephrosis. The third dog was allowed to live a year. Toward the last the animal's stools were copious and bloody. The post-mortem showed pyelitis and pyonephrosis.

NOVARO,[16] 1887. *Three dogs, one recovery; both ureters in rectum; one killed at end of four months; ureteral orifices patent; one kidney normal; other dilated from stenosis.* Novaro reported the pathological findings in a dog in which the ureters had been implanted in the rectum four months previously. Two other dogs failed to survive the operation. The animal passed all his urine by the rectum, was continent, and remained well up to the time of his death. The bladder had shrunk to the size of a hazlenut and the ureteral orifices were patent. The right ureter and kidney were normal; the left ureter and corresponding kidney were dilated, probably from a stenosis of the uretero-rectal opening. The rectal wall showed no changes except muscular hypertrophy. From these findings Novaro recommended the operation, and emphasized the fact that it would be much less formidable in man on account of the larger caliber of the ureters and the possibility of employing more stringent antisepsis.

I have been unable to consult Novaro's original article. Van Hook, in speaking of the paper, says that "a microscopic examination of the kidneys was made. The testimony of the pathologist who made the examination is not absolutely unequivocal as to the inflammatory changes, and no bacteriologic examination of the mucous membrane of the pelves of the kidneys and the mucous membrane of the ureters was recorded."

TUFFIER,[3a] 1880. *Two dogs; single ureter in rectum; death in four days from peritonitis; uretero-rectal stenosis.* Tuffier endeavored to implant the ureters into the rectum in two dogs. Under the strictest antiseptic precautions the abdomen was opened and 2 cm. of the inferior third of the ureter was isolated, care being taken to preserve the fatty and peritoneal coverings. An elastic ligature was applied about the ureter to prevent the escape of urine. Two strands of fine catgut were passed 1 cm. above the severed end. The intestine was opened by a small incision and the ureter carried into the bowel cavity 1 cm., where it was left freely hanging. The ureter was then carefully sutured to the intestinal wall and the incision closed with a Lembert suture. The animal lived but three days. The autopsy showed an intestinal fistula at the level of the suture and a general peritonitis. The ureter was partially stenosed at the rectal opening, and was already filled with a purulent fluid. The same experiment in another dog resulted in death on the fifth day, and the ureter was again found filled with pus.

TIZZONI AND POZZI,[22] 1888. *Two dogs, one recovery; both ureters implanted into loop of isolated bowel, and latter sutured to neck of bladder.* These experimenters isolated a piece of the small intestine, 7 cm. long, and united its ends, as well as the ends of the remaining bowel tract. A month later the ureters were implanted into this isolated portion of the intestine and the loop sutured to the neck of the bladder. At first the animal was incontinent, but after a while continence was established. The post-mortem two years after the operation showed the isolated loop of bowel empty and a new bladder formed from the neck of the bladder. An attempt to do the operation in one stage was a failure, the dog dying eight days after the operation.

These experiments have been included here, although, strictly speaking, the ureters were not implanted into the intestinal tract. The survival of the animal for such a long period of time shows what would result could the septic nature of the cavity into which the ureters are implanted be dispensed with.

PAOLI AND BUSACHI,[17] 1888. *Four dogs, one recovery; both ureters implanted; stenosis; pyelonephritis.* In four experiments made on dogs the ureters were sutured into the intestine. In nearly every case a constriction developed at the point of exit of the ureter. Two of the dogs died—one of a pyelonephritis, the other of infiltration of the urine; the third presented a dilatation of the intestine with anemia of the corresponding kidney. The fourth animal made a good recovery.

REED,[19] 1892. *Nine dogs; three recoveries; pyelonephritis; hydronephrosis; one kidney normal.* Reed succeeded in implanting one ureter in the rectum in three dogs, but six animals in which a bilateral implantation was attempted died. In the three dogs that survived the ureter was passed through a small slit in the rectum six inches above the anus and held in place by sutures passed through the sero-muscular edges of the bowel and the peritoneum, which had been dissected away with the ureter. The first dog lived ten weeks, but the specimen was lost. The kidney of the second dog was congested and showed evidences of acute nephritis and hydronephrosis. There was a perfect union of ureter and rectum. The third dog was killed twenty-five days after the operation. The left kidney was normal and there was no renal congestion or hydronephrosis. The uretero-rectal opening was patent.

In the six bilateral uretero-rectal anastomoses the ureters were inserted into the bowel three-quarters of an inch. The remainder of the operation was as described above. All the animals died in a few days of peritonitis or nephritis. Post-mortems showed in most instances hydronephrosis. From these experiments Reed concludes that the implantation of one ureter into the rectum is a possible and practical procedure, but that the simultaneous implantation of both ureters is still a questionable surgical procedure.

RÓSCISZEWSKI,[20] 1892. *Six dogs; one recovery; autopsy after three months; ureter thickened; hydronephrosis.* Rósciszewski implanted a single ureter into the rectum in six dogs, of which five died in three to five days of peritonitis due to giving way of the sutures. One dog survived three months. Death resulted from peritonitis following implantation of the other ureter. The post-mortem showed that the uretero-rectal union in the first operation was complete, and that a probe could be passed into the ureteral orifice quite easily. The rectal mucosa was normal. The ureter itself was thickened, and the pelvis of the kidney, which contained a purulent fluid, was considerably dilated. The kidney substance showed evidences of the interstitial changes. Rósciszewski ascribes the failure of the operation to imperfect technique.

(To be continued.)

Doses in German Pharmacopeia.—In the new edition of the Pharmacopeia Germanica patent-protected names are avoided as much as possible and the scientific term used. Salol, for instance, is recorded as phenyl salicylate, etc. The new names introduced in this class are: dermatol as basic bismuth gallate, trional as methyl sulphonal and salipyrin as phenyldimethyl-pyrazolon salicylate. The *Berliner klin. Woch.* quotes some of the new maximal doses with an exclamation point after each. Among them are bromoform, .5 to 1.5; hydrargyrum salicylicum, .02; the single dose of creosote has been changed from .2 to .5. The daily dose of tincture of strychnin is given as 1 to 2; of folia digitalis .2 to 1, and of the tincture, 1.5 to 5.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

61 Market Street : : Chicago, Ill.

Cable Address: "Medic, Chicago"

Subscription price: Five dollars per annum in advance

SATURDAY, FEBRUARY 16, 1901.

HEREDITY AS A FACTOR IN THE ETIOLOGY OF PULMONARY TUBERCULOSIS.

Conflicting opinions have at different times existed as to the importance of heredity in the etiology of pulmonary tuberculosis. It is, however, scarcely maintained any longer that the disease itself is so transmitted, but rather that it is some vice of tissue—and therefore some aberration of function—that is thus conveyed from parent to child. Rarely tuberculosis is congenital, but even then the disease is not inherited, but merely acquired by the fetus *in utero* from the mother through the placenta. There can be no tuberculosis without tubercle bacilli, and these bacilli can not be inherited, although the susceptibility to their invasion can be and is. Some interesting data bearing on this subject are presented in a lecture delivered recently by Thomas Oliver.[1] From the statistics of the Mutual Life Insurance Company, of New York, it appears that a family history of tuberculosis indicates a liability to the disease on the part of an applicant for life insurance, and that the amount of this increased liability may be estimated at 30 per cent. This liability is naturally the greater when there is a history of two or more tuberculous persons in a family, and also when the disease occurs in a parent than when it occurs in a brother or sister.

By some it is believed that, of the parents, the mother is more likely than the father to transmit the liability if she herself or her family be tuberculous. The statistics of the Mutual Life Insurance Company, however, indicate the reverse, showing that the percentage of liability to pulmonary tuberculosis between 20 and 29 years is 43.3, when the father, and 36.5 when the mother has died from that disease; between 30 and 39 years the figures are 16.1 and 17.1 respectively; between 40 and 49 years, 10.4 and 7.5 respectively; and above 50 years, 9.6 and 4.6 respectively. In the experience of the Scottish Widows Fund, however, undoubted pulmonary tuberculosis is more frequently transmitted by the mother than by the father, the ratio being 6.29 on the side of the latter, as against 8.97 per cent. on the part of the former.

Tuberculous patients are below the normal in weight. It is an accepted fact that the highest mortality-percentage from tuberculosis and the highest proportion of underweights are encountered before middle age, and the lowest mortality-percentage and the highest proportion of overweights after middle age. In persons with no history of pulmonary tuberculosis in the family twice as many deaths occur among those below as among those above the average weight, while in families with such a history the percentage is greater—a circumstance that indicates that poor physique and enfeebled nutrition play some part in the etiology of the disease. In the experience of the Scottish Widows Fund, 80 per cent. of sufferers from pulmonary tuberculosis fall short of the average weight for height. Light weight and especially losing weight are precursors of pulmonary tuberculosis. Robust bodily development, on the other hand, while not without a favorable influence, does not prevent pulmonary tuberculosis, for the strongest athlete with a splendid physical frame, if a member of a tuberculous family, may succumb to the inherited disease. Neither does robust physical development, even in the absence of a tuberculous family history, insure against the danger of the disease. All are liable, but unequally so.

A study of all the cases admitted into Brompton Hospital for Consumptives, from 1855 to 1880, shows that when there is a family history of pulmonary tuberculosis, the members of that family who become tuberculous do so at an earlier age than do those of a family free from the disease who acquire it; also that when there is a history of tuberculosis in both parents, there is not only greater liability to the disease, but it develops at a still earlier age than when there is but a single inheritance. Among 3000 cases, 38 per cent. occurred in males and 58 per cent. in females who gave a family history of pulmonary tuberculosis. In 80 cases of well-marked family tuberculosis there was a history of paternal inheritance in 24, of maternal inheritance in 30, of double heredity in 24, and of atavism in 12. In these 80 families 385 children were born, 203 males and 182 females. In these tuberculosis appeared in 98 males and 96 females; and there died from this disease in childhood, 21 males and 16 females, while 84 males and 70 females remained apparently healthy. From these figures the conclusion is reached that the effect of paternal inheritance on males is to cause pulmonary tuberculosis to appear at an earlier age than in the parent and to reduce the constitutional resistance of the individual to the disease, while in females also it causes an earlier manifestation of the disease, but if anything, increases their resistance to it. The influence of tuberculous mothers, on the other hand, on their male offspring, is to increase the tendency to rather copious bleedings from the lungs, a circumstance that is not noticeable in females.

1. Lancet, Nov. 10, 1900, p. 1335.

THE ETIOLOGY OF YELLOW FEVER.

The belief is growing that insects are important, even essential factors in the etiology of certain diseases. That malaria is inseparably connected with a mosquito that acts as an intermediate agent in the dissemination of

the disease, has been proved definitely by suitable experiments, and the mosquito theory of malaria is in accord with the epidemiologic facts of the disease. Certain observations in the American typhoid camps of the Spanish-American War have brought the fly to the fore as a probable and dangerous carrier of typhoid fever. For some time past great interest has been taken in the etiology of yellow fever, and since the recent studies of Reed, Carroll and Agramonte on the rôle of the mosquito in this disease,[1] additional data have been awaited with much eagerness. Important additional evidence of the etiologic importance of mosquitoes—Culex fasciatus, Fabr.—in yellow fever is given in the paper presented by these investigators at the recent Pan-American Medical Congress in Havana, and published in this issue of THE JOURNAL. A few comments on this important paper may be ventured. At first thought one might be tempted to characterize the experiments carried out on the human beings as unwarrantable, but as we are assured that everything was done with the full consent and full knowledge of the nature of the experiments on the part of the non-immunes who placed themselves at the disposal of the experimenters, there can be no adequate reason for complaint on this score. Whatever the opinion concerning this phase of the experiments, it in no way modifies the scientific value of the results. The non-immunes that allowed themselves to be bitten by mosquitoes that previously had sucked the blood of yellow fever patients, as well as the persons who slept in the "Infected Clothing and Bedding Building," seem to have submitted themselves unreservedly to the requirements of the experiments. There are examples here of unselfish devotion to the cause of humanity and of science.

The results of the experiments support the mosquito theory of yellow fever. The data are as yet rather scanty for the establishment of absolute conclusions with regard to all phases of the etiology of this disease, the specific cause of which is unknown. It seems well settled, however, that mosquitoes that have fed on the blood of yellow fever patients may transmit the disease to non-immunes. No one will doubt the far-reaching importance of this demonstration! Some evidence is also brought forward to show that exclusion of the intermediate host for the parasite of yellow fever renders the disease intransmissible. The results of experiments with infected clothing and bedding must be viewed in this light. The statement that "disinfection of articles of clothing, bedding, or merchandise, supposedly contaminated by contact with those sick with this disease—yellow fever—is unnecessary," seems to go a little further than the facts warrant; for it has not yet been shown that the intermediate host might not pick up, as it were, the parasite of the disease from these contaminated materials. In the future it is possible that the prevention of yellow fever may be reduced to the protection of both sick and well from the bites of Culex fasciatus, and to the destruction of this mosquito, should it be found to be the only intermediate host capable of transmission of the disease.

1. JOURNAL A. M. A., Nov. 3, 1900, p. 1156 and p. 1170.

THE PATHOLOGY OF AKROMEGALY.

Lesions of the pituitary body have been found in so large a proportion of cases of akromegaly in which post-mortem examination has been made that, according to the prevailing view, the symptoms of the disease are to be attributed to such lesions, the pituitary body being believed to exercise some influence—of an inhibitory nature—on the growth and development of the skeleton, and the removal of which permits of hypertrophy of the bones. Some enlargement of the pituitary body has been observed also in cases of myxedema and cretinism; while, on the other hand, tumors of the pituitary body are sometimes unattended with symptoms of akromegaly and, as has been indicated, no change in the pituitary body has been noted in some cases of akromegaly, this body having been entirely wanting in at least one case. In many, further, the thyroid gland has been enlarged; and the thymus has been persistent in some. Enlargement of the spleen, hypertrophy of the breast, and changes in the pancreas and the ovaries—together with menstrual derangement—have also been occasionally observed. In view of the facts, therefore, the question can reasonably be asked whether the change in the pituitary body may not be merely one part of the morbid anatomy, in turn giving rise to certain symptoms peculiar to itself, and, together with the other changes due to some as yet undiscovered underlying common cause.

To the growing list of cases of akromegaly presenting lesions of the pituitary body, Mendel[1] adds another, in which this gland was the seat of a sarcoma. The patient was a woman, 29 years old, in whom characteristic symptoms had been present for six years. In addition to the typical changes in the skeleton—the hyperplasia of the supraorbital margins, the malar arches, the lower jaw, the hands and feet—there was temporal hemianopsia, with enlargement of the thyroid gland, abolition of the knee-jerks, and amenorrhea. Subsequently there developed also intense frontal and occipital headache, and severe and at times incoercible vomiting. Remissions occurred from time to time, but these were attended with polyphagia and polydipsia. The breasts were enlarged, notwithstanding the general emaciation. Treatment with a preparation of pituitary gland was without avail. Death occurred suddenly in an attack of pain. On post-mortem examination a tumor rather larger than a walnut was found at the base of the brain, in the region of the optic chiasm. The growth measured 6.5 cm. in its greatest width, and 3.5 cm. in its greatest thickness, and it was of soft, spongy consistence and grayish-red in color. On histologic examination, it proved to be a large, round-cell sarcoma, with connective-tissue septa in places, in part

1. Berlin. klin. Woch., 1900, No. 46, p. 1031.

in process of myxomatous transformation. The tumor extended forward into the substance of the orbital temporal convolutions. On section, it was found that posteriorly it virtually occupied the third ventricle, extending symmetrically from below and the middle line into the greatly dilated lateral ventricles. The head of the caudate nucleus, a large part of the fibers of the knee of the corpus callosum, as well as both optic thalami, and the substance of the orbital temporal convolutions, were involved in the growth. The optic tracts were reduced to fine threads and were displaced by the tumor. The chiasm was represented by a thin band, resembling connective tissue. The sella turcica was excavated and enlarged in all directions. Its walls were thinned anteriorly as well as posteriorly, but the bone was not invaded by the new-growth. There was no trace of the normal structure of the pituitary body. The thyroid gland was greatly enlarged from the presence of colloid material; the thymus gland was persistent; the spleen was enlarged and softened; the right ovary was cystic; the mammary glands were excessively developed. Apart from uniform increase in size, the bones of the skeleton presented no abnormality; and the heart, lungs, liver and kidneys also were normal.

NEW FIELD FOR TRAINED NURSES.

From an editorial paragraph in a British contemporary[1] we learn that one of the latest fads over there is having trained nurses for pet dogs. We have heard of women nursing dogs before, but this is the first notice of that function of trained nurses. There is so much said nowadays of the high ideal, etc., of the nursing profession that it is something of a shock when this evidence comes to hand that, to some extent at least in Great Britain, it is literally "going to the dogs." So far as known this bestial fad has not appeared as yet in this country, though a combination of zoophile and anglomaniac possibly exists that may introduce it.

DIPLOMA-MILL GRADUATES IN MICHIGAN.

The Armstrong diploma-mill products located in Michigan are making a fight for their professional existence, and are unscrupuously using all means to that end. As an example of their zeal a circular explaining itself as "an appeal to the medical profession of the state" has been sent out seeking signers for a petition to the governor and legislature asking that the law be amended in their behalf. One argument used by them is that the present law will be declared unconstitutional by the U. S. Supreme Court. "Having a knowledge of all this," says their spokesman, "we do not think it wise or prudent to open up Michigan once more as a dumping ground for quacks." Whatever the judicial opinion may be on technical points of the law, the anxiety of these fellows whose medical qualifications were derived from the convicted fraud Armstrong and his quack manufactories to keep Michigan from being a "dumping ground" is sufficiently peculiar and conspicuous to be noteworthy.

1. Med. Press and Cir., Jan. 23.

EXPERIMENTAL TRANSPLANTATION OF INTESTINE INTO THE STOMACH.

Experimental operations on the gastro-intestinal tract have been long a favorite field for the investigator. The contributions to experimental intestinal surgery by Senn have exercised a marked stimulus on the workers in this field. The purpose of these investigations is an exceedingly practical one, namely, to lay a sound foundation for the complicated and difficult surgical measures necessary to meet the numerous and varying indications presented in curative abdominal surgery. Recently Reerink[1] undertook to demonstrate whether large defects in the anterior wall of the stomach could be filled satisfactorily with implanted pieces of the intestine. For this purpose he excised a segment of the colon in dogs, reunited the divided ends of the colon, and sutured the piece of intestine, after laying it open, into a corresponding defect in the anterior wall of the stomach. After the first two or three mishaps he succeeded in securing firm fibrous union of the implanted intestine to the walls of the stomach. The final fate of the implanted piece has still to be determined by new experiments. Contingencies are easily imagined in which this procedure may be of advantage in human surgery—after excision of tumors and of ulcers of the stomach, for instance. In few fields is the ingenuity of the experimenter more quickly rewarded by increased facilities for expansion of surgical intervention than in experimental surgery of the abdomen.

MEMBRANOUS ANGINA DUE TO OTHER MICRO-ORGANISMS THAN DIPHTHERIA BACILLI.

It is by no means always safe to make a diagnosis of diphtheria from the presence of so-called false membrane in the throat or upon any other mucous or epithelial surface, as it is perfectly well known clinically, and has been demonstrated bacteriologically, that such a condition may be due also to the activity of other micro-organisms than diphtheria bacilli, and even without the intermediation of bacteria; for instance, as a result of the action of hot liquids or corrosive poisons or vapors. Thus, it has been shown that the angina of scarlet fever is not dependent on the activity of diphtheria bacilli, but is probably due to that of streptococci, and the oidium albicans is capable of giving rise to depositions of thrush that may cause some doubt in diagnosis. In addition to these, it is pointed out by Dr. W. G. Bissell[2] that the micrococcus of sputum-septicemia may cause the formation of a membranous deposit in the throat indistinguishable clinically from that of diphtheria. In the experience of the Bureau of Bacteriology of the Buffalo Department of Health there has been no fatal case of membranous angina due to the oidium albicans, although several cases of this character, due to streptococci and the micrococci of sputum-septicemia, have been observed. It is thought that these disorders, if at all communicable, are less so than diphtheria. These facts emphasize the necessity, already appreciated, of submitting to bacteriologic examination material from diseased throats, and governing the stringency of

1. Ziegler's Beitr., 1900, xxviii, 524-540.

2. Buffalo Med. Jour., December, 1900, p. 312; JOURNAL A. M. A., Dec. 15, 1900, p. 1584, 59.

isolation in accordance with the identity of the microorganisms present.

MARRIAGE LEGISLATION.

In no less than three states at the present time enactments regulating marriage are before the legislatures, and apparently with some prospects of success. They are alike in their general provisions, prohibiting the union when one or the other of the candidates for matrimony is not physically sound, is subject to insanity, epilepsy, tuberculosis or other hereditary disease. In one state the proposed law apparently prohibits marriage if one or both the parties are members of a family tainted with these disorders, and in one there is an age limit established for women at 45 years, according to the newspaper reports of the bill. This probably is the same provision as is contained in a similar enactment in an eastern state in which marriage was permitted after the presumed reproductive period had been passed, and not a prohibition of marriage after that age. The difficulty with these and any similar laws is the impossibility of executing them; there may be a heavy penalty for the forbidden marriage in one state, but the ceremony can be legally performed a few miles away in another, and then the relations must be recognized as legal everywhere within the United States. So long as there is any part of the country where such laws do not prevail, they can be rendered ineffective. There is still another objection—if legal marriage is made difficult, illegal births become more frequent and illegitimacy may be added to degeneracy in a considerable portion of the population, a result certainly not to be desired. It would be an excellent thing could we prevent the propagation of diseased heredity. The sum of human happiness would be increased if fewer people were almost inevitably predestined from birth to suffering and disease, but the question is how far can we prevent it by law with our present social and political institutions. The experiment seems likely to be tried, possibly on an extensive scale, and the results will be of interest.

USE AND PRESCRIPTION OF ALCOHOL.

The Woman's Christian Temperance Union has issued a circular to physicians asking their aid "in the efforts being made to remove as far as possible all tendencies and temptations toward the formation of the drink habit." It particularly requests physicians to warn patients against the home prescription of alcohol and the use of proprietary medicines containing alcohol and other narcotic drugs. The circular would, however, be more effective with the medical profession generally did it not imply in other statements it contains, that alcohol has no value under any conditions as a medicine. There are, we know, physicians of acknowledged reputation who hold this view, but there is a much larger number, most of them, we believe, in full sympathy with the objects of the Woman's Christian Temperance Union, who maintain that it has its uses and that in certain morbid conditions nothing can well supply its place. These views are honestly held by, we believe, the great majority of the medical profession, and are perfectly compatible with the strictest temperance principles. A conscientious physician, holding that alcohol is a poison, but like many other poisons useful as a medicine under certain circumstances, would employ it as he would other poisons with all precautions against arousing appetite; he might even consider the dangers of alcohol to contraindicate its use in certain cases, notwithstanding its therapeutic value. The W. C. T. U. would have done better, we think, to have recognized the possible value of alcohol as a medicine, or at least the difference of opinion in regard to it, while not abating in any way the general condemnation of its indiscriminate prescription for ailments when it is not needed, and they would have then had the unqualified support of a vast majority of the medical profession.

SERUM TREATMENT OF MALIGNANT TUMORS.

Wlaeff immunized geese with blastomycetic organisms obtained from malignant tumors by Curtis, Plimmer and Sanfelice. He then subjected some 26 patients with carcinomas and other tumors to treatment with the serum of the immune geese.[1] The results are reported to show that the serum, which for some reason not stated is called anti-cellular, is quite harmless and free from danger; there forms a swelling at the seat of injection; the tumor itself swells up; later it diminishes in size, and eventually after repeated injections it may become encapsulated; regional lymphatic glands return to their normal size in case they are the seat of inflammatory enlargements, and those that are invaded by metastases diminish in volume. In favorable cases it is claimed that the serum may cause diminution in the size of the tumor and arrest of its evolution. Some abatement follows serum injections, also in advanced cases with ulceration and metastases. Among the general effects of the serum are noted: Some rise in temperature, shooting pains in the tumor, increase in strength and weight, return of sleep and appetite, marked leucocytosis, and occasionally an urticarial eruption. Seven to twelve cubic centimeters are injected subcutaneously in the thigh, the injections being repeated every 5 to 8 days. Wlaeff regards this treatment as the most valuable we now have. Whether a complete cure is obtainable by his method remains to be seen. At present he is working with asses, hoping to thus obtain a more efficacious serum. It is safe to say that this method as yet rests on a rather insufficient scientific basis. It is true that Curtis, Plimmer, and Sanfelice isolated blastomycetes from human tumors; and Wlaeff as well as Sanfelice claim they have produced true tumors in animals by injection of some of these organisms; but this claim has not been generally accepted, the common opinion being that the resulting growths are of inflammatory origin. In some of Wlaeff's experiments, however, epithelial proliferations with much similarity to adenoma are recorded, concerning the nature of which, whether inflammatory or truly neoplastic, there seems to be room for well-founded doubt. Wlaeff says that his serum cures infected animals, whereas the controls die from "tumors" and cachexia. It is also rather singular that serums produced by injections of different organisms from different kinds of tumors should have similar action on various tumors in human patients. The "anti-cellular" serum lacks the

1. Compt. Rend. de Soc. de Biol., 1900, lii, 1030-32.

specificness, which is expected from analogy with other sorts of anti-serum. Naturally, the results here referred to must be confirmed by others before they may be accepted as at all decisive. They show, however, the direction in which the blastomycetic theory of malignant tumors is leading investigation.

CALIFORNIA'S PLAGUE LEGISLATION.

THE JOURNAL has already editorially noticed some extraordinary recommendations in the recent message of the Governor of California. These have since borne fruit in a bill offered in the state legislature which makes it a felony for any person "to publish by any writing or printing that Asiatic cholera or bubonic plague exists or has recently existed within the state unless the State Board of Health thereof has first determined such to be the fact and has entered a record of such determination upon the minutes of such board." This proposed law would therefore require a physician recognizing one of these diseases to suppress the fact until the State Board of Health chooses to investigate the matter and have the diagnosis regularly entered on its minutes, a procedure that would be eminently incompatible with the interests of the public as regards precautions against the spread of the disease. It is hard to understand how any rational legislator can fail to see this aspect of the case, and should the measure pass it can only be ascribed to a wave of acute imbecility involving the legislature. The bill as it stands is, as a California paper expresses it, "An act to make perjurers out of reputable physicians under penalty of being felons if they tell the truth." It is satisfactory to see that some newspapers in that state take a sensible course in regard to the matter, in spite of the apparent unreasoning craze that seems to have taken possession of the authorities. Unless the people of California come to their senses about the plague they may find themselves more seriously involved than they expect. The San Francisco Board of Health is undoubtedly doing what it can to check the spread of the plague, and so far with much apparent success, but there can be no assured confidence that it will be entirely stamped out as long as the state authorities adopt the ostrich policy of denying its existence, and the presumption exists that their action is in accordance. Such legislation as is proposed and the course of Governor Gage and the San Francisco press will do the state much more harm than good. What this country and other countries wish to know is that the California authorities are doing what they can to eradicate the pest. So far they have apparently done nothing but protest, and that altogether too much.

THE RELATION OF MALARIA TO THE GEOGRAPHIC DISTRIBUTION OF THE MALARIA-BEARING MOSQUITO.

Grassi asserts that the geographic distribution of the genus Anopheles, the mosquito of malaria, in Italy coincides with that of malaria. He thinks that a like coincidence will be found the world over. In the first number of the *Journal of Hygiene,* a new publication from Cambridge, England, founded for the purpose of the publishing in the English language of original work in hygiene, Nuttall, Cobbett and Strangeways-Pigg show quite clearly that Grassi's claim has no general application; for they have found Anopheles in many parts of England "where there is no record of malaria having previously existed, and where there is certainly no malaria to-day." Celli also has found Anopheles in healthy places in Italy in which there has never been malaria. The disappearance of malaria from Great Britain consequently does not depend upon the extinction of mosquitoes capable of harboring the parasites of malaria. The English investigators mentioned found Anopheles most numerously in low-lying land with stagnant water, in every way suitable for their habitat, and corresponding to former malarious districts. The disappearance of malaria is therefore attributed to several causes other than extinction of Anopheles, such as reduction of the numbers of this mosquito due to drainage of the land, reduction of the population by emigration, and possibly the use of quinin. Emigration would reduce the number of infected persons and thus lessen the source of infection of Anopheles, and the same result would follow the use of quinin, which checks the development of parasites in the blood. Probably drainage was the most efficient cause; at all events the older authors largely ascribed to it the disappearance of ague. As the geographic distribution of Anopheles is wider than that of malaria, it would seem as if an essential factor in the etiology of malaria is the number of Anopheles in any one place. The occurrence of Anopheles in non-malarious districts explains the occasional development of malaria in unexpected places without refuge to the assumption that malaria-bearing mosquitoes have been imported, as a malarious patient might well infect the local insects. Investigators studying malaria in various parts ought to follow the lines laid down in this report and search as carefully for Anopheles in non-malarious as in malarious regions. Only by such work is definite knowledge obtainable in regard to this phase of malaria and whether other blood-sucking insects may be the hosts of the malarial parasites.

THE DISSEMINATION OF THE TUBERCLE BACILLI FROM COWS IN COUGHING.

Inasmuch as the lungs are the most common seat of tuberculosis, and infection occurs through the dissemination of the discharges of the morbid lesions, the sputum constitutes the most frequent medium of communication. It has been shown that the milk of tuberculous animals may assume this rôle, even when the mammary gland and the nipples are not the seat of the disease; and occasionally infected flesh used as food, and imperfectly cooked, may act in a similar way. Human beings, however, are considered the worst offenders in this connection, by reason of the pernicious practice of promiscuous spitting, although it has been shown that tubercle bacilli may be contained in the fine particles ejected in the act of coughing. While the lower animals can not be charged with the offense of spitting, they do, however, cough; and it has, perhaps, not been sufficiently appreciated that in this way they may additionally aid in the spread of tuberculosis. That such a mode of dissemination is at least possible is demonstrated by some experimental observations made

by Dr. M. R. Ravenel,[1] in the laboratory of the State Live Stock Sanitary Board of Pennsylvania, which illustrate, besides, one of the beneficent objects to which intelligently administered boards of this character can devote themselves. By means of an ordinary nose-bag, near the bottom of which was arranged a shelf of sterilized soft pine wood, and kept in place for varying periods of time, the smallest particles ejected by tuberculous cows in the act of coughing were caught, then removed with a platinum needle to a cover-slip and examined microscopically. In this way it was possible to invariably demonstrate tubercle bacilli in the bronchial secretion from five tuberculous cows—twenty times in thirty-four examinations. In some instances, in which microscopic demonstration failed, inoculation experiments yielded positive results. As is pointed out, the danger to human beings from such atomized sputum is confined to those who come into contact with the animals, but it is much more constant and more pronounced for other animals in the same stable.

Medical News.

CALIFORNIA.

Dr. **Luther M. Powers** was re-elected health officer of Los Angeles, January 29.

Dr. **Myrtle Aplin**, East Highlands, formerly house physician at the Lane Hospital, San Francisco, has been appointed resident physician at the State Insane Asylum at Napa.

COLORADO.

New Medical Bill.—Dr. Benjamin F. Jefferson, Steamboat Springs, senator from Routt County, has introduced a bill into the senate which places the practice of medicine in the state entirely under the control of the State Board of Medical Examiners, which consists of five regulars, three homeopaths and one eclectic, to be named by the governor.

A Glenwood Springs physician set at defiance orders issued by the mayor to report to the municipal authorities all cases of contagious disease, and treated five cases of smallpox, reporting later to the secretary of the State Board of Health that he had the patients under supervision. The local board of health has instituted legal proceedings against him.

Prize Essay on the Dangers from Quackery.—The Colorado State Medical Society offers a prize of $25 for the best essay, deemed worthy of the prize, pointing out the dangers to public health and morals, especially to young persons, from quackery as promulgated by public advertisements. The competition is open to all. Essays must be type-written, in English, and submitted before May 15. Each essay must be designated by a motto, and accompanied by a sealed envelope, bearing the same motto, and enclosing the name and address of the author. The essay receiving the prize will become the property of the Society for publication. Others will be returned on application. Essays should be sent to the Literary Committee, room 315, McPhee Building, Denver, Colo.

ILLINOIS.

The Use of the Title "M.D.," or "Dr." by those who have not first obtained a license to practice medicine under the laws of the state is prohibited in a bill introduced by Representative Jones, of Cook County, February 6.

Medical Legislation.—If Senator Stubblefield's amendment which provides that nothing in the act shall be construed to apply to any person who ministers to or treats the sick or suffering by massage or by mental or spiritual means without the use of any drug or material remedy prevails, the new medical bill will be detrimental to all. The word "massage" will let down the bars to a great horde of quacks and charlatans who will work the gravest injury to public health and demoralize the medical profession. A committee has been appointed by the Illinois State Medical Society to combat the amendment, and is now conducting a most active campaign against the proposed measure. The co-operation of the sixty medical societies throughout the state has been invited and physicians all over the state are enlisted in the cause and are using all endeavor to defeat the bill.

1. Proceedings of Path. Soc. of Phila., N. S., iv, No. 2, p. 26.

Chicago.

Dr. William H. German will continue the work of the late Dr. Charles W. Purdy, of which he has been in charge for some months past.

Medical Students in parties of ten are being taken three times a week, by health department officials, to the Isolation Hospital to learn more of smallpox by actual observation of patients in that institution.

Wesley Hospital has received two donations of $5000 and $1000 from donors whose names are not to be announced until the dedicatory exercises of the new hospital, in May. The donations thus far received by the hospital amount to $191,000.

Hospitals benefit to the extent of $50,000 each by the generosity of the late Albert A. Munger. The institutions named are the Women's and Children's Hospital, the Chicago Foundlings' Home, the Chicago Nursery and Half-Orphan Asylum and the Home for Incurables.

A Hindu victim of the "International Medical College" has made an appeal to the world to prove his genuineness as a physician. He paid for his diploma, but his practice suffered when the president of the "college" was convicted of fraud. He supplements his appeal by testimonials, protests and other documents signed by high officials of India.

Health Conditions.—In every respect, except as to influenza, public health conditions continue to be satisfactory. The weekly bulletin of the health department announces that the threatening indications of the first three weeks of the year, during which the death-rate was 16.5 per 1000, as against 16.1 during the corresponding period of 1900, have subsided during the last three weeks, in which there were 125 fewer deaths than last year and a change in death-rates from 15.5 per 1000 in 1900 to 14.2 this year. Typhoid fever, diphtheria, scarlet fever, bronchitis and pneumonia death-rates are unusually low for the season of the year and remarkably so in the presence of influenza.

Scarcity of Ripe Vaccin.—Subsidence of the smallpox outbreak is especially fortunate in view of the scarcity of ripe vaccin. This scarcity has led producers to furnish lymph that has not been exposed to the action of the glycerin long enough to sterilize it properly. Such lymph produces very severe symptoms and the old-time "sore arms" of the vaccine "point." So serious had this become that school vaccination was suspended temporarily by the commissioner of health on February 8. It is expected to resume in a short time—as soon as the daily examinations in the laboratory show that the lymph is in proper condition. The emergency is not deemed grave enough to warrant the use of lymph which causes so much useless suffering and disability. Added severity of vaccination adds nothing to its protective power against smallpox; it is simply an evidence of impurity in the lymph—impurity which is removed by the action of the glycerin in from fifty to sixty days.

INDIANA.

Dr. Joseph L. Bell, Richmond, has been appointed assistant-surgeon in the army, and is ordered to report at Fort Crook, Neb.

An anonymous benefactor has added $10,000 to the $4000 already subscribed for the projected Union Hospital at Crawfordsville. This donation will assure the establishment of the hospital.

Hospital for Inebriates.—The committee on inebriety, of the State Board of Medical Registration, met at Indianapolis, February 1, and prepared a bill asking for an appropriation of $100,000 to found a state hospital for inebriates.

"Christian Science."—Senator Wood, of Lafayette, is making a fight in the legislature against "Christian Science." His bill makes it a felony for one having the care of a dependent person to withhold medical attention from such person on account of "Christian Science," death resulting from such withholding.

IOWA.

Smallpox is reported in more than forty localities in the state.

Dr. Benjamin W. Searle has been appointed pension examiner at Ottumwa.

Dr. Benjamin F. Campbell, Burlington, has been appointed physician of Des Moines County, vice Dr. Albert C. Zaiser, resigned.

The new coroner for Clinton County, to fill the position made vacant by the death of Dr. Charles Osborn, for the unexpired term, is Dr. Schuyler C. Hamilton, of Lyons.

Dr. Charles R. Russell, Ottumwa, has been reappointed physician of Wapello County, and Dr. E. A. Shaafe, also of Ottumwa, physician for three townships in the county.

Dr. Joseph A. Scroggs, Keokuk, has retired from the State Board of Health and the State Board of Medical Examiners, February 1, after serving for seven years, the latter part of the time as president.

MARYLAND.

Dr. William Osler, Baltimore, has given $1000 to the endowment fund of the library of the Maryland Medical and Chirurgical Faculty.

Dr. Lindsay Peters, formerly an assistant to Dr. Howard Kelly, has been made one of the resident staff of the insane department of Bayview Hospital, Baltimore.

Dr. William Whitridge, Baltimore, was elected president of the Maryland Society for the Prevention of Cruelty to Animals, at the twenty-eighth annual meeting, held January 19.

Dr. Thomas B. Owings, health officer of Howard County, recently discovered three cases of smallpox at Hanover Switch, near Elkridge. Many persons had been exposed and the cases had not been reported. A general outbreak is feared.

MICHIGAN.

An unlicensed Practitioner, of New Troy, has been arrested at the instance of the officers of the Berrien County Medical Society, for practicing in violation of the state law.

Dissection material in quantity sufficient to supply the needs of the students of the University of Michigan is difficult to secure, as the number of students has increased disproportionally with the number of unclaimed bodies of those who die in public institutions.

January Health of Michigan.—The report of the secretary of the State Board of Health shows that in the month of January, compared with the average in the ten years preceding, typhoid fever and smallpox were much more prevalent, and diarrhea, intermittent fever, erysipelas, remittent fever, measles, cerebrospinal meningitis and whooping-cough were less prevalent than usual.

New Medical Registration Board.—The governor appointed, on January 31, a new state board of medical registration, the appointments of the previous board having never been confirmed. As the board now stands, only four of the ten members hold over. It is composed of the following: Drs. Joseph B. Griswold, Grand Rapids; George E. Ranney, Lansing; Walter H. Sawyer, Hillsdale; Austin W. Alvord, Battle Creek; Henry B. Landon, Bay City, and five from other schools of medicine.

MINNESOTA.

Dr. David N. Jones, Gaylord, has been appointed a trustee for the state hospitals for the insane.

State Medical Examiners.—The governor has appointed Dr. Albert G. Stoddard, Fairfax; Dr. William Davis, St. Paul, and Dr. Albert F. Groves, Brainerd, members of the board.

Sanatarium for Consumptives.—A bill was introduced in the senate February 2 providing for a state sanitarium in the pine woods, for the treatment and cure of consumptives. It carries an appropriation of $150,000, with an annual appropriation of $50,000 for maintenance.

Osteopathic License.—A bill was introduced in the senate, February 2, providing that graduates of any legally incorporated school of osteopathy, may, on presentation of their diplomas and the payment of a fee of $2 to the secretary of state, secure a certificate authorizing them to practice osteopathy in the state. A penalty of from $50 to $100 is provided for practicing without such license, or obtaining one by fraud. Osteopathy is declared not to be the practice of medicine within the meaning of the state medical law.

MISSOURI.

Non-resident physicians are prohibited from practicing medicine in the state by proxy, by a bill passed by the state senate, February 5.

A State Hospital is proposed for the benefit of the sick poor of Missouri who now are sent to St. Louis for treatment, thus imposing a disproportionate burden on the municipal finances.

Under the new law Dr. James K. Graham, St. Joseph, has been appointed physician for the newly organized county board of health, and Dr. Carl Bitter, St. Charles, for that of St. Charles County.

The Smallpox Bill.—This, the first bill passed by the state legislature, provides for the creation of a county board of health in each county, which shall appoint a reputable physician. These county boards shall have the same powers and authority as are already given to the State Board of Health, within their respective limits, exclusive of incorporated cities and towns, regarding quarantine regulations and the prevention of the spread of communicable diseases therein.

NEW YORK.

Dr. Eugene J. Hanratta, Watervliet, has been reappointed city physician.

Dr. John C. Brown, Albany, has been appointed penitentiary physician, vice Dr. Charles H. Richardson, resigned.

A Smallpox Expert.—The State Board of Health has sent a smallpox expert to tour the state as an inspector, visiting the various places where smallpox has developed, and giving such advice to the local health authorities as may be needed.

Consumptive Hospital.—A bill has been introduced in the senate appropriating $100,000 to apply on the construction of the State Hospital for Incipient Consumptives. An appropriation was made some time ago, and if this bill passes, there will be enough money available to build a hospital with accommodations for 100 patients.

A Practitioner of Medicine.—According to an amendment to the Bell bill, approved by the state and New York City and County Medical associations a practitioner of medicine is one "who shall give treatment to any other person by the use of any remedy, agent, or method whatsoever, whether with or without the use of any medicine or instruments, or other appliances for the relief or cure of any wound or fracture, bodily injury or infirmity, physical or mental disease."

Buffalo.

Dr. Harry Mead has tendered his resignation as captain and assistant-surgeon of the Sixty-fifth regiment, N. G., N. Y.

Dr. Frederick W. Barrows, professor of histology and biology, at the University of Buffalo, was elected president of the New York State Association of Science Teachers at its recent meeting held at Rochester.

Dr. Eugene Wasdin, U. S. Marine-Hospital Service, now stationed at Buffalo, has been tendered by the Italian government the cross of officer of S. S. Maurizio et Lazzaro in recognition of his services in verifying and confirming the Italian studies and discoveries regarding the nature of yellow fever.

Charges Against Fitch Hospital—Recently one of the daily papers made sensational charges against the superintendent and house physicians of the Fifth Accident Hospital. The hospital committee of the institution has found the charges without foundation, but the trustees of the Charity Organization Society of which the hospital was a branch, by resolution, welcome an inquiry by any responsible public authority, and charge and instruct all committees and employees of the society to give every facility for the full discovery of the facts and to render all assistance in their power.

New York City.

Home for Male Cancer Patients.—The Dominican sisters, who have in charge the recently established St. Rose's Free Home for Incurable Cancer Sufferers, have taken steps toward raising $40,000 to establish a similar home for such male patients.

Insanity Laws.—The New York Neurological Society and the State Charities Aid Association have each passed resolutions condemning any amendment to the state insanity laws, which would do away with the provision that the medical member of the commission shall have had five years' actual experience in the care and treatment of the insane.

Testimonial to Prof. Quinlan.—A complimentary dinner was tendered to Dr. Francis J. Quinlan, January 31, at which a loving-cup suitably inscribed was presented to him. Many distinguished members of the profession were present, and representatives from the various hospitals and medical schools. The dinner was given under the auspices of the New York Celtic Society.

Bellevue Hospital Abuses.—The report of the medical board to Commissioner Keller, shows that during 1900 24,309 patients were admitted to the hospital, 11,370 of which were ambulance cases. The five other principal hospitals of New York City cared for 2300 less patients than Bellevue Hospital alone. The report recommends that the insane be placed in

charge of two well-qualified, salaried physicians who shall be held responsible for the condition of every one of their patients. Pupil nurses are not considered fitted for work in the insane pavilion. Special stress is laid on the absence of proper discipline and of a system whereby all nurses are held strictly and directly accountable to the superintendent of the hospital. The present system of poorly-paid and poorly-housed helpers is found to be a source not only of discomfort but of actual disease.

OHIO.

Dr. Harry **H. Hatcher,** Dayton, has succeeded Dr. John C. Reeve, Jr., as district surgeon of the Erie Railway.

Dr. John **C. Larkin,** Hillsboro, has been appointed local surgeon for the Baltimore and Ohio Southwestern Railroad.

Dr. and **Mrs. Samuel W. Kelley,** Cleveland, sailed January 31 on the *Augusta-Victoria* for a seventy-day cruise of the Mediterranean.

Dr. Caroline **B. Culver,** Sandusky, has been appointed a member of the medical staff of the State Hospital for the Insane at Massillon.

Lakeside **Hospital,** Cleveland, has received $10,000 from Mr. L. C. Hanna, to complete the erection and equipment of a ward for communicable diseases.

PENNSYLVANIA.

New Insane **Hospital.**—Representative Calder, of Harrisburg, on recommendation of the State Board of Charities, has introduced a bill in the house appropriating $500,000 for the construction of a new Pennsylvania state lunatic hospital in Harrisburg. It is hoped that if the appropriation is made the building now located there will be torn down and other buildings erected, 2 for convalescents, and 2 for destructive and dangerous patients. The sum of $350,000 will be required to erect these buildings, while the remainder of the amount is required for additional buildings.

Philadelphia.

A gift of $1000 has been given the Episcopal Hospital.

Medical **Inspection.**—During January, the medical inspectors acted on 457 cases of diphtheria, 329 of scarlet fever, 352 of typhoid fever, 210 of tuberculosis, and 1 case of smallpox.

Friction at **Germantown Hospital.**—Owing to friction between the board of managers and the staff of regular physicians of the Children's Hospital of Germantown, the latter have withdrawn as a body and left matters in the hands of the homeopaths, who are in full control of the institution.

"**Knockout Drops.**"—So common has it become to report deaths due to "knockout"drops and other poisons that Coroner Dugan has been urging the enforcement of the laws regarding the sale of poisonous drugs, and of preventing their sale unless on physicians' prescription.

Antivaccination Bill.—A special meeting of the board of health was held February 11, to protest against the antivaccination bill recently introduced in the legislature. The immunity from smallpox in this city at this time has been attributed largely to the enforcement of the existing laws on this subject. Only a few cases have been discovered during the year, and these ordinarily occurred among negroes who had come in contact with others from infected districts of the South.

TENNESSEE.

Dr. J. **S. Dye,** Chattanooga, has returned after several months spent in study in Vienna.

Chattanooga is to have an ambulance and an isolation hospital, the latter being accessible only by a special pest-boat.

Dr. Howard **K. Edgerton,** Lebanon, sustained a fracture of both legs, February 1, by a tree falling across his buggy while he was driving.

The **Nashville Board of Health** reorganized January 28 and elected Dr. William G. Ewing, president. Dr. William Bailey is the new member.

Dr. Walter **S. Nash,** who sued the City of Knoxville for more than $1000 for services in the treatment of smallpox, has had his claim disallowed by Chancellor Shields.

The **House** of Representatives has again refused to give the State Board of Health power to control contagious diseases, where county and city officials fail in their duty. Efforts were made to exempt the cities, and otherwise make the bill acceptable over the opposition, but without avail.

UTAH.

Dr. Harry **N. Mayo** has been appointed to succeed Dr. Hyrum A. Anderson as physician of Salt Lake County.

Efficacy of Vaccination.—The Salt Lake Board of Health statistics show that from October 1 to December 31 there were 314 cases of smallpox in Salt Lake City, of which 291 were persons who had never been vaccinated. Of the remaining 23 cases 14 had not been vaccinated for more than twenty years.

Anti-vaccinationist Victory.—A bill introduced into the house of representatives, making it unlawful for any board of health or other board, having police powers or otherwise, to compel vaccination, or to make it precedent to the attendance of public or private schools recently passed by a vote of 37 to 6

The State Board of Medical Examiners, in the biennial report, states that during the two years ended Dec. 31, 1900, 42 persons were examined, 38 of whom received licenses to practice. The suggestion is made that the act of the legislature regulating the practice of medicine be so amended that the board can issue certificates from other recognized state boards of medical examiners, who would accept the state board's certificates in the spirit of reciprocity.

The medical men of Ogden have entered into a combination against irregular practitioners. At a joint meeting of the two medical societies, January 18, resolutions were passed stating that the members will sign no death certificates where the dead person was treated by a non-graduate or an irregular practitioner. No specific class is mentioned, but it is understood that the doctors intended the resolutions to apply to christian scientists, faith healers and similar practitioners.

VIRGINIA.

Protest Against License.—The physicians of the state have inaugurated a movement having for its object the abolition of the special license fee for physicians in the state. At present the physician pays a license fee to the city and another to the state, graded to the extent of his practice. In addition, he pays registration fees, income tax, etc.

Physician Indicted.—A practitioner, who, it is claimed, has never taken the state examination, although he has practiced in Newport News for several years, has been indicted by the grand jury for practicing as a physician and surgeon without securing a certificate from the State Board of Medical Examiners.

WISCONSIN.

Dr. **John Madden,** professor of physiology, Milwaukee Medical College, has resigned.

Dr. **John Phillips** has been appointed special physician in charge of smallpox patients in Stevens Point, at a salary of $15 a day.

Dr. **William B. Lyman,** superintendent of the State Hospital for the Insane, at Mendota, has resigned and will return to practice in Eau Claire.

Dr. **Arthur L. Payne,** Eau Claire, has been awarded damages of $5300 against parties who claimed that the plaintiff had been guilty of fraud and deception in his treatment and report of a case.

CANADA.

Leprosy in New Brunswick.—According to the annual report of the Minister of Agriculture of the Dominion Government, at the Lazaretto at Tracadie, N. B., there were 4 deaths during the year among the lepers, and 3 new admissions. At the present time there are 20 lepers in the institution, 13 males and 7 females.

Counter Prescribing.—This has been a much-talked-of subject among the druggists of Toronto during the past week or two. Over a dozen have recently been in the police court, at the instance of the detective of the Ontario Medical Council, and those of them whose cases have been heard have been fined $25 and costs or thirty days in jail without hard labor. This has been due to violations of the medical act, and is commonly called "counter prescribing."

Amalgamation of Medical Colleges.—The subcommittee for arranging a plan for amalgamation between Trinity and Toronto Medical Schools has placed its report in the hands of the general committee. It represents the labors of the subcommittee for the past twelve months. Dr. Irving Cameron was chairman of the sub-committee for Toronto while Dr. Charles Sheard acted in a similar capacity for Trinity. This report will now be sent on to the faculties of the two bodies concerned, when, after being confidentially considered by them, it will become the property of the public.

Ontario's Health.—The Ontario Provincial Board of Health held its quarterly meeting in Toronto last week, under the presidency of Dr. E. H. Vaux, of Hamilton. In his annual

address, the chairman referred to the outbreaks of smallpox in several American states, and in other places in Canada. In Ontario, smallpox has broken out during the past year in twenty districts, but the department, through prompt measures of Dr. Bryce, has succeeded in completely stamping it out in each district. Regarding diphtheria, this had shown a falling off during the year, with the single exception of Toronto, where the disease had been very prevalent for some time past, and where the deaths from it alone reached 149 during the past year. This number was remarkable, when it was known that the total death-rate from diphtheria in Ontario was 486. In the month of January there were 21 deaths from it in Toronto. Tuberculosis caused an increase in the death-rate during the year. An important item dealt with by the board was that in reference to consumptives traveling in Pullman cars, and their proper disinfection thereafter. In this connection, the board will seek to co-operate with the railway companies.

FOREIGN.

The French minister of war has ordered that lectures be delivered at army posts on the dangers of drunkenness.

In Budapesth compulsory disinfection of the residence after the death of a tuberculous person is now enforced under penalty.

Dr. G. Holzknecht has been appointed Roentgen-ray expert in Vienna, the courts having created that office on account of the frequency of legal proceedings in which the rays play a part.

Physicians' Tour.—The Paris *Presse Médicale* has organized a "tour of the universities" for a party of forty physicians, to leave May 1. The route includes Lille, Liége, Cologne, Bonn, Heidelberg, Strasburg and Paris.

Serumtherapy.—Three medico-surgical societies of Paris have arranged for a joint meeting March 7, to discuss the question of serums in therapeutics. An address on the subject is to be distributed to all the members ten days before. Similar sessions are to be held from time to time.

Supervision of Medical Journals.—A bureau of medical literature has been organized by the German minister of public instruction as a supplementary measure to his recent decree prohibiting therapeutic or other experiments similar to those for which Neisser was condemned. A complete oversight of all the medical periodicals in the country is the task of the bureau. Our German exchanges have not mentioned this innovation, but it is described in a dispatch to the Paris *Semaine Méd.*, January 30.

Tetanus from Antidiphtheria Serum.—Dispatches to the *Semaine Méd.*, dated January 19, in regard to the cases of tetanus that followed the injection of antidiphtheria serum from the Milan Institute, noted in last week's JOURNAL (p. 391), state that the deaths now number twenty. A portion of the institute building was being demolished at the time the serum was prepared, and contamination may have occurred in this way. The officials of the institute have decided that henceforth the departments in which the various serums are prepared must be entirely separate and remote from each other, and the vials are also fused instead of corked as heretofore. The *British Med. Jour.*, February 2, states that four cases of tetanus following injections of hemostatic gelatin in typhoid fever have also recently occurred in the large hospital at Rome. It was found that the gelatin was prepared in a private pharmacy. An order has since been issued by the board of health that only gelatin prepared in laboratories of recognized scientific standing is to be used.

Vaccination Difficulties in Yucatan.—The surgeon-general of the Marine-Hospital Service has received an interesting report from the United States consul at Progresso, Yucatan, regarding the smallpox in that city and vicinity, and the difficulties encountered in enforcing vaccination. He states that a portion of the population consists of half-breeds known as Mestizoes and full-blooded Maya Indians. Regarding the opposition to vaccination, he writes as follows: "In their old pagan religion the great god 'Kak' was the god of fire and of smallpox, and as God-given the disease was not only to be received without question but to a certain extent courted. Young children were sometimes actually carried to the sick one's bedside to receive the divine fire. This old belief, while not now expressed in words still holds place in their inherent superstition, hence their indifference to the vaccination and the cases of smallpox that, despite all efforts, they will conceal amid the huts. Only when death occurs and the secret can not be hid is the case made public. Fines and remonstrances are in vain with such people. They pay the one and listen to the other with equal impassivity. Compulsory isolation in a public pest-house was tried, but this seemed to turn the passive into open menacing resistance and it was deemed best to modify the decree."

LONDON.

Report of the South African Hospitals Commission.

The report of the commission appointed to investigate the condition of the South African military hospitals, after the publication of Mr. Burdett-Coutts' serious charges, has been issued. The forecast already ventured in THE JOURNAL, that the army medical corps had well performed their duties, but that the red tape of a more or less obsolete war office was at fault, has been verified. It may be remembered that the commission first met in London on July 23 and held six sittings in London, and one at the great hospital and army school of Netley. They then sailed for Cape Town and proceeded up the country, inspecting all the hospitals on the line of route of the troops and taking evidence. They visited Bloemfontein, Kroonstadt, Pretoria and Johannesburg. They then went into Natal and examined the hospitals on their way down to Durban. A difficulty was experienced in getting the evidence of private soldiers, because they were slow in making complaints, more from a feeling of loyalty to their cloth than from being punished by their superiors. But in the hospital they were no doubt deterred by fear of the consequences. Except in certain instances, the complaints against the administration of the army medical corps, against individual hospitals, and against individual officers were found to be somewhat exaggerated, and were based on an insufficient understanding of the peculiar difficulties of the campaign. But there were very serious defects in the medical organization, for which a number of thorough-going reforms are suggested. These reforms are in the main those advocated by Mr. Burdett-Coutts in his letters to the *Times* which produced such a profound sensation.

Inadequacy of the Medical Staff.—The general inadequacy of the medical staff for a war of such unexpected magnitude is insisted on, but this is only part of the inadequacy of the whole military system. The medical corps was insufficient in both staff and equipment, and means were not provided by which its staff could be enlarged or its deficiencies promptly made good. This was not the fault of the medical director general and his staff, because a considerable time before the outbreak they urged upon the military authorities the necessity of an increase of the corps, but for the most part without avail.

Obsolete Ambulance Wagons.—The ambulance wagons were almost universally condemned. They were very heavy, requiring a large number of mules, and were very jolty and uncomfortable. The type used appears not to have been materially changed or improved upon for many years. The commission recommended they should be supplanted by a better type.

Lack of Transport in the General Hospitals.—The fixed general hospitals were generally not furnished with their own transport for the purpose of conveying patients between railway and other stations and the hospital. The transport was ordinarily supplied by requisition on the army service corps. This occasionally led to delay in patients being conveyed to and from the hospital, especially when convoys with sick and wounded arrived unexpectedly at railway stations. The delay was unavoidable because the hospitals had not their own means of transport at hand.

General Efficiency of the Medical Corps, but Need of Reforms.—The report does not endorse the many sweeping charges which have been leveled at the medical corps, and declares that as a whole they deserve great praise for their devotion and capacity and regrets the large number who have died in the discharge of their duty. But it admits that a feeling against the corps exists and that there is need for improvement. Many military officers distrust the skill and professional experience of the army doctors as compared with civil doctors. To a great extent the commission believes that this mistrust is unfounded. That it is not wholly unfounded is explained by the difficulties under which these army doctors work. Even in peace the corps is undermanned and overworked. The majority of the doctors have not sufficient holidays or leave of absence and no adequate opportunities of studying or keeping abreast of recent advances in medicine and surgery. In consequence there is some difficulty in obtaining men of good professional standing to join the corps. Again, the practice of appointing men to important posts by mere seniority is too rigidly followed. The commission recommend that: 1, the staff be permanently enlarged; 2, inducements be offered to ensure a supply of men of good professional attainment; 3, the men who have joined be kept, as a body, acquainted with the general progress of professional subjects.

Deficiency of Staff and Equipment for the War.—At the outbreak of the war there were available staff and equipment only two army corps. An army corps is approximately composed of three infantry divisions of 10,000 men each, and 6000 corps troops—cavalry, artillery, engineers, etc. Even the two army corps which were first employed were staffed and equipped with difficulty. When they were supplied there remained only a reserve equipment sufficient for one general and two stationary hospitals. The explanation for so small a reserve was that improvements were so often made in various articles that it was undesirable to keep a large stock of what might prove useless. For the other corps the deficiency was made up by private hospitals, civil doctors and untrained orderlies. The field-hospitals were ten short of their proper number, which caused a great strain throughout the campaign. At the time of greatest pressure—March, 1900—the total forces amounted to 207,000 men, for whom 800 medical officers—including civil doctors—6000 hospital subordinates, and 800 nurses were employed.

The State of Affairs at Bloemfontein in May.—The condition of the hospitals at Bloemfontein was the *pièce de résistance* of Mr. Coutts' charges. The commission finds that when the army began to advance toward Kroonstadt the field-hospitals had to be cleared in order to accompany the troops and the patients had to be discharged into the general hospitals. As the advance continued the sick and wounded were sent back toward Bloemfontein, with the result that there was great overcrowding of the hospitals. There were deficiencies in bedsteads, mattresses, commodes, bedpans, feeding cups and hospital clothing and an insufficient staff. But this condition was almost impossible to remedy, owing to the congested state of the single line of rail on which the whole army had to rely for food. In certain cases typhoid patients, but not very ill ones, had to attend to themselves.

Skiagraphy in Diseases of the Chest.

At the Medical Society of London, Dr. H. Walsham and Dr. Clifford Beale read an important paper on this subject. In order to obtain a satisfactory shadow, either on the fluorescent screen or the sensitive plate, a powerful coil, capable of yielding a 12 to 14-inch spark, is necessary. The patient should lie prone over the sensitive plate, with the tube two to three feet above the couch, the anticathode in the tube being placed exactly vertical to the part to be examined. Stereoscopic views can be obtained by Mr. Mackenzie Davidson's apparatus. An exposure of two minutes is, as a rule, sufficient. It is always advisable to examine with the screen at the back as well as the front, and useful information can be obtained by diagonal observations. There is no danger of dermatitis when the rays are passed only for a few minutes at a time. Cases of dermatitis have been reported, but the exposures have been excessive—one-half hour to two hours. To interpret morbid shadows, normal ones must be studied. Skiagraphs were thrown upon the screen clearly showing the shadows of the heart, diaphragm and mediastinal tissues, and in addition faint streaks by the left side of the heart shadow, and both sides of the mediastinal shadow. These have been shown by Dr. Walsham's and Dr. Beale's observations to be due to the pericardium and visceral pleura. The shadow of the scapula, the anterior axillary fold and in some cases the shadow of the nipple are easily identified by moving the arms. The very earliest deposit of tubercle does not yield any appreciable shadow. Cases were quoted showing that tuberculous shadows can be detected before there are abnormal physical signs. Cavities are indicated by light areas in dense shadows. Fibroid changes only give a shadow after they attain a definite density and their shadows differ considerably from those of tubercle. Empyema is indicated by exceptional translucency. In early dry pleurisy only a faint shadow can be detected. Serous effusion causes a faint blurring of the rib shadows, but does not obliterate them. Purulent effusion gives very dark shadows. Abscesses and caseating nodules give dark shadows. By far the most important use of skiagraphy in chest disease is for the detection of aneurysms and morbid growths. It may give evidence far more precise and definite than that obtained by ordinary methods.

Uremic Convulsions Successfully Treated by Bleeding and Saline Transfusion.

At the Liverpool Medical Institution, Dr. R. T. Glynn recently related the case of a man, aged 31, who entered the hospital with acute nephritis, apparently of ten days' duration, and probably the result of alcoholism and a chill. The urine was scanty, of high specific gravity and very albuminous. The pulse was tense and the heart enlarged. Notwithstanding the administration of purgatives and diaphoretics, including the hypodermic injection of pilocarpin and the restriction of food to diluted milk, uremic symptoms developed four days after admission. One fit followed another, with coma, stertor, cyanosis and contracted pupils. The condition having lasted several hours, two pints of blood were removed and one of saline solution was injected into the connective tissue of the axilla and shortly afterward one-half pint into the rectum. The convulsions ceased and consciousness returned. He perspired freely for the first time and on the next day passed 46 ounces of urine, 20 ounces having been the maximum in the twenty-four hours previous. In the following ten days he passed on an average 70 ounces of urine in twenty-four hours. The albumin disappeared, the arterial tension decreased, the apex of the heart returned to its normal site, and he left the hospital in about a month, apparently quite well.

Correspondence.

Water in Typhoid Fever.

SARATOGA SPRINGS, N. Y., Jan. 29, 1901.

To the Editor:—In THE JOURNAL of January 24 there was an article by Dr. Anders, of Philadelphia, on the use of large quantities of water in typhoid fever, and I was particularly pleased that so eminent an individual as Dr. Anders endorsed the procedure in this manner and thought it worthy of attention at a meeting of the AMERICAN MEDICAL ASSOCIATION. In 1898 I read an article on the use of water in typhoid fever before our local society, emphasizing the great quantities required in some cases, the difficulties in teaching nurses to give the required amount, the very great influence it exercised over all the symptoms, that the patient's condition was not so critical with a very high temperature if plenty of water was given, that if a sufficient quantity were given tub-baths were not imperative, which in private practice will be appreciated by most of us, and lastly, that the guide to the quantity of water required in each individual case was the tongue—this member must be moist at all times regardless of the quantity consumed.

I sent this manuscript to a weekly medical journal for publication, and it was returned to me with the information—though I can not give the exact wording—that the article was too visionary. It was, however, promptly published by the *Albany Medical Annals*, and I am glad to have the commendation expressed by Dr. Anders' article for the thoughts expressed at that time.

I have been using quantities of water as suggested in my practice since 1895, with the greatest comfort to myself and benefit to my patient. In 1898 I had only treated nineteen consecutive patients without a death, now the number is something over fifty. Many of these have been most desperate cases, and we are sure that the use of water has been a factor in their recovery. Surely no one who has been in the habit of treating typhoid fever without quantities of water internally can realize what it means to see the patient going through such an illness with the high temperature, nervous manifestations, sordes, dry tongue, and, practically, all the complications mitigated or absent. I find that patients require much larger quantities of water than mentioned by Dr. Anders. He speaks of 5 or 6 quarts as being often required in twenty-four hours, but I find that it is often necessary to use very much more, and I frequently note that the patient has taken from 8 to 16 quarts in twenty-four hours. To one who has not used this quantity the administration would seem almost impossible. It requires determination on the part of the physician, with a consciousness that it is the proper treatment, to insist that the nurse does as directed, and this is the particular thing which seems very difficult for them to understand, appreciate or execute.

The guide to the amount of water required is a very important one, and is not mentioned by Dr. Anders, or others, so far as I know, at all; that is, that the tongue must be moist at all times. This will necessitate the patient's being disturbed at least every half hour, perhaps oftener, to be given from 4 to 8 ounces of water, but unless this is done no conclusions can be deduced concerning its value in these cases. Yours truly,

511 Broadway. D. C. MORIARTA, M.D.

The New Method of Inducing Sleep Without Drugs: One-Hundred-Dollar Prize.

NORTHAMPTON, MASS., Jan. 30, 1901.

To the Editor:—The one grand step in scientific medicine during the centuries has been that just accomplished at the close of the nineteenth. Tuberculosis is now to be cured by sunshine, open-air exercise and plain food. Drugs, predigested foods and the poisonous inhalations of the closed wards are recognized as causes rather than cures of tuberculosis.

A revolution of no less importance is in process to liberate the non-sleeping, hypnotic, drug-taking brain-workers now on duty in all the great centers of this country. Drug unconsciousness is causative, not curative, of insomnia. By well-trained will power we may command quiet in the workshop of the brain, as we may in the mill. It is all a matter of turning on and off the belts.

"The New Method of Inducing Sleep Without Drugs" consists in bringing under control two functions of organic life at the retiring hour. The organs of respiration and circulation respond at once to our bidding, and automatic brain activity is rendered impossible. To "stop thinking" is to begin sleeping. Normal sleep is reparative. Drug unconsciousness is destructive.

Believing the medical profession has power to turn the attention of suffering humanity from the chimerical and damaging drug agents they now resort to and depend on, and that it is our duty to shed light rather than darkness, I offer a prize of $100 for an essay describing any method that will equal or surpass the one above referred to.

Judges of the merits of essays offered will be representative men of scientific medicine. The time allotted for preparing the essay is the first half of the year 1901, the essay not to exceed four thousand words. Only type-written or printed matter will be examined. All names will be withheld until the award is given. J. B. LEARNED, M.D.

Married.

JAMES S. DAWSON, M.D., Perry, N.Y., to Miss Verdi Dennison, of Canisteo, January 30.

PETER E. HYRUP-PEDERSON, M.D., to Miss Marie Louise Alsop, both of Laramie, Wyo., January 24.

MOLLIE V. LEWIS, M.D., Madison, Ind., to Mr. John Sarran, of Indianapolis, at Vevay, Ind., January 30.

Deaths and Obituaries.

Abraham Bettman, M.D., an old resident of Cincinnati, Ohio, who settled there in 1846, and with the exception of three years spent in Chicago, lived afterward in that city, died after an illness of a week, from kidney disease, at his home in Cincinnati, January 14, at the age of 95. He studied medicine in the universities of Wurtzburg, Erlangen, Heidelberg and Munich, and graduated from the latter in 1842. He then took a post-graduate course in Vienna under Professor Skoda. He retired from active practice in 1880. In 1892 the University of Munich, in honor of the fiftieth anniversary of his graduation, sent him an honorary diploma.

William W. Lane, M.D., New York University, 1855, died at Wilmington, N. C., from cirrhosis of the liver, February 4, aged 69. After his graduation, Dr. Lane studied two years in Paris, and then settled in Vicksburg, Miss., and on the outbreak of the Civil War, served on the Confederate side. 1870 he moved to Wilmington and was put in charge of the U. S. Marine-Hospital in that city. In 1881 he was placed in charge of the City Hospital, a position which he filled until his death.

Benjamin Franklin, M.D., New York University, 1868, died at his home in Newark, N. J., from la grippe on February 6. During the Civil War he was a prisoner for seven months at Andersonville and he also served with the Cuban patriot army in the ten-years war. He was a member of THE AMERICAN MEDICAL ASSOCIATION.

Emery A. Merrifield, M.D., Albany Medical College, Albany, N. Y., 1853, of Macon, Mo., died at the Baptist Hospital, St. Louis, December 7, aged 74. He practiced in Herkimer county, New York, until 1860, when he went into the service as surgeon of the 58th Illinois Volunteers and served throughout the war.

Michael Royston Pigott, M.D., University of Virginia, Passed-Asst. Surgeon, U. S. Navy, died suddenly at the Naval Academy, Annapolis, Md., January 31, aged 35. He was a native of Massachusetts and instructor in physiology and hygiene at the Naval Academy.

Newton J. Wedgewood, M.D., Medical School of Maine, Brunswick, 1870, of Lewiston, Me., and a member of the Androscoggin, Maine Medical, and THE AMERICAN MEDICAL ASSOCIATIONS, died at his home in Lewiston, February 5, from Bright's disease, aged 54.

Walter Myers, M.D.—The Liverpool School of Tropical Medicine announces, with deep regret, the death, from yellow fever, of Dr. Walter Myers, one of the members of the yellow fever expedition of that school, who lost his life in the cause of humanity and science.

Henry F. Baxter, M.D., University of Pennsylvania, 1864, a member of the County Medical Society and of THE AMERICAN MEDICAL ASSOCIATION, died at his home in Philadelphia, February 1, after a prolonged illness, at the age of 57 years.

John M. Hundley, M.D., Jefferson Medical College, Philadelphia, 1849, at one time a prominent physician of Essex County, Va., died after an illness of three years from paralysis, at his home in Montague, January 30, aged 75.

Lincoln Johnson, M.D., Columbian University, Washington, D.C., 1894, died January 2 from yellow fever, at Bocas del Toro, Colombia, South America, where he had gone to engage in practice. He was 32 years old.

Clayton A. Cowgill, M.D., Pennsylvania Medical College, Philadelphia, 1846, who retired six years ago after nearly half a century of practice in Dover, Del., died at his residence in Philadelphia, February 2, aged 74.

Daniel W. Hazelton, M.D., Vermont Medical College, Woodstock, 1848, of Springfield, Vt., the oldest practicing physician in the locality, died in Bellows Falls, Vt., January 31, from pneumonia, aged 76.

David N. De Tar, M.D., University of Michigan, Ann Arbor, 1880, died January 31, at his home in Boone, Iowa, from cerebral hemorrhage, following an attack of cholelithiasis. He was 48 years of age.

William H. Scott, M.D., Meharry Medical College, Nashville, Tenn., 1886, a colored physician of Houston, Texas, died at his home in that city, February 1, after a prolonged illness.

Ira Doan, M.D., Medical College of Indiana, Indianapolis, 1880, of North Bend, Neb., a member of THE AMERICAN MEDICAL ASSOCIATION, died suddenly at Fremont, Neb., February 6.

Charles Osborn, M.D., Rush Medical College, Chicago, 1890, of Lyons, Iowa, coroner of Clinton County, died February 2 from apoplexy, at Mercy Hospital, Dubuque, Iowa, aged 35.

Jacob H. Putnam, M.D., Long Island College Hospital, Brooklyn, N. Y., 1867, of Rutland, Vt., died from pneumonia at the Buffalo General Hospital, January 28, aged 61.

Rosier Middleton, M.D., Columbian University, Washington, D. C., 1889, died from consumption after a long illness at the Columbian University Hospital, January 31.

Lewis Buffett, M.D., who went to Maryland from Cleveland, Ohio, in 1891, died at his home near Easton, Md., January 27, from carcinoma of the stomach.

Samuel H. Cade, M.D., Medical College of Alabama, Mobile, 1874, died at Negreet, La., where he had resided for the past twenty-five years, February 7.

Augustine Shurtleff, M.D., Harvard University Medical School, Boston, 1849, died at his home in Brookline, Mass., January 27, aged 74.

John E. Garner, M.D., College of Physicians and Surgeons, Baltimore, Md., 1876, died suddenly at his home near Union, S. C., February 3.

Wiley W. Bloodworth, M.D., Jefferson Medical College, Philadelphia, 1850, died at his home in Pratt City, Ala., January 28.

J. B. Darling, M.D., Starling Medical College, Columbus, Ohio, 1857, died at Austin, Ill., February 2.

James Harty Kennedy, M.D., McGill University, Montreal, died recently at Michipicoten, Ontario.

Henry C. Hill, M.D., University of Michigan, 1859, died at Lockport, N. Y., February 8, aged 60.

Samuel C. Busey, M.D., of Washington, D. C., died February 12. His obituary will appear next week.

Association News.

Chairmen of Committees of the American Medical Association.

Dr. J. F. Fulton, Lowry Arcade, St. Paul, Minn., on arrangements.

Dr. C. A. Wheaton, Lowry Arcade, St. Paul, Minn., on finance.

Dr. J. W. Chamberlin, Lowry Arcade, St. Paul, Minn., badges.

Dr. C. Williams, 145 West 5th street, St. Paul, Minn., banquets.

Dr. H. L. Taylor, Lowry Arcade, St. Paul, Minn., general exhibits.

Dr. H. H. Kimball, Dayton Building, St. Paul, Minn., meeting places.

Dr. Burnside Foster, Lowry Arcade, St. Paul, Minn., entertainments.

Dr. Edw. Boeckmann, Lowry Arcade, St. Paul, Minn., pathological exhibits.

Dr. J. A. Quinn, corner 4th street and Wabasha, St. Paul, Minn., transportation.

Dr. Harry O'Brien, Endicott Arcade, St. Paul, Minn., programs and publications.

Dr. J. T. Rogers, Lowry Arcade, St. Paul, Minn., halls and meeting places.

Dr. E. J. Abbott, Endicott Arcade, St. Paul, Minn., bureau of information.

Dr. J. B. Brimhall, Seven Corners, St. Paul, Minn., registration.

Dr. Arthur Sweeney, Lowry Arcade, St. Paul, Minn., hotel arrangements.

Book Notices.

MALARIA ACCORDING TO THE NEW RESEARCHES. By Prof. Angelo Celli, Director of the Institute of Hygiene, University of Rome. Translated from the Second Italian Edition, by John Joseph Eyre, M.R.C.P., L.R.C.S. Ire., D.P.H. Cambridge. With an Introduction by Dr. Patrick Manson, Medical Adviser to the Colonial Office. With Maps and Illustrations. Cloth. Pp. 275. Price $3.00. London, New York, and Bombay: Longmans, Green & Co. 1900.

"We owe to the Italians not only the name but also much of our knowledge of malaria." Thus Dr. Patrick Manson begins his Introduction to the work, and one of the most eminent of these Italian students of the epidemiology of paludism is Professor Celli. Dr. Manson further says: "I saw the peasants whose sordid lives he describes so graphically, and I saw in operation the economic system which, together with malaria, has reduced these wretched people to what is practically a position of slavery."

In the chapter on the history of malaria the author dwells upon the drainage system, the cloacæ and aqueducts of the early Romans, and shows how they had maintained a sanitary city, although surrounded by a deadly malarial zone. Many passages from the ancient Latin writers—Horace, Pliny, etc.—are quoted, and show the dread with which the surrounding Campagna was regarded at that time. Later, foreign invasions and civil strife destroyed the work already done and nullified the efforts of the popes to drain the Agro Romano, and thus reduced it to an uninhabited waste.

The scientific consideration of malaria is fully taken up by the author, and numerous illustrations render the text clear. The book affords instructive and interesting reading.

MANUAL OF THE DISEASES OF THE EYE. For Students and General Practitioners. With 243 Original Illustrations including 12 Colored Figures. By Charles H. May, M.D., Chief of Clinic and Instructor in Ophthalmology, College of Physicians and Surgeons, New York. Cloth. Pp. 406. Price, $2.00. New York: William Wood & Co. 1900.

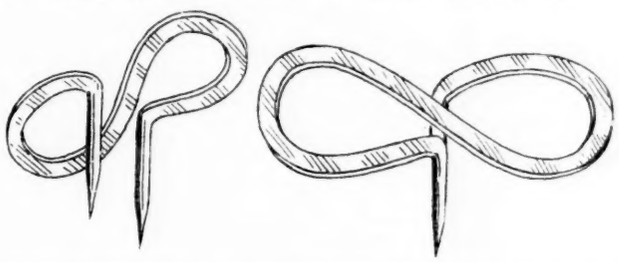
This concise and useful little manual is intended for the student and general practitioner. The text is elucidated by numerous illustrations both of ocular diseases and the instruments in general use by the ophthalmologist. There are several colored plates of the normal and pathologic fundus. Errors of refraction are fully explained and the different methods of their recognition and correction made clear. We confidently recommend the work.

New Instruments.

New Bandage Pin.

GEORGE D. McLEAN.
NASHVILLE, TENN.

I present illustrations of a bandage-pin recently devised by me. The pin is made as follows: A figure-of-eight piece of wire having the two ends turned at right angles to the plane of base and the ends sharpened. The base is flattened and the two prongs extend one-half to five-eighths of an inch up from the base, perpendicular to it and parallel to each other. These two are about one-fourth of an inch apart. In applying a bandage, say a recurrent of the scalp, after making one turn around the head to fix the bandage place one pin on the inion and one just above the sinciput; this will enable the surgeon, by pressing the bandage down over the extending prongs, and



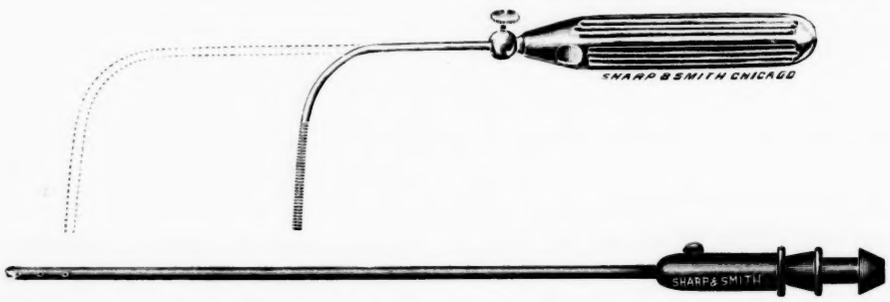
returning over them, to apply this bandage alone and with a single-headed roller bandage. After enough has been put on separate the prongs and turn down against the head, making, if desired, one turn around to hold them down and protect the points. This pin will work in any spica, figure of eight, or recurrent, as of a stump, absolutely preventing slipping at the point of application. The device is simple, and it is strange that it is not already in use; but I have been unable to find any one who has heard of one used by surgeons. The pin has been commended by many of the physicians of Nashville, and will, I think, meet the approval of all who have to use bandages.

A Nasal Irrigator, Intratracheal Spray and Laryngeal Applicator.

OTTO T. FREER, M.D.
CHICAGO.

The instruments here described have grown out of the needs of practice and have all seen lengthy service in my hands. To avoid the danger of fluid penetrating the middle ear, incident to the use of the nasal douche or syringe, I have devised the little irrigating tube shown in the cut. It is made of hard

rubber, hence has some elasticity, and is perforated near its end by three minute holes, 1/64 inch in diameter. The tube is connected to a fountain syringe by the usual coupling for Eustachian catheters, and emits three tiny but forcible jets that are not large enough to flood the nose or nasopharynx, but undermine and wash adherent pus or crusts from these regions. I give the tube to the patient to use at home, and during many years of its employment have never had any complaint of ear symptoms, while the patients, even in marked cases of ozena, keep the nose and nasopharynx clean. In aggravated cases I aid the use of the tube by means of oily applications to soften the crusts. The advantage of the instrument over the postnasal syringe is that during the use of the latter the patient is apt to raise the soft palate and so diminish or entirely obliterate the postnasal space, thus preventing irrigating fluids from reaching the parts to be cleansed. By rotation of the tube the streams can be made to reach any part of the nasal fossæ from the roof to the floor. More than three holes were found to unduly diminish the force of the streams and to emit too great an amount of fluid. Metal tubes are too stiff and cause pain.



The second instrument shown is a spray tube that I have designed for intratracheal applications in chronic tracheitis, especially the dry form with crusts. The appliance screws on to the regular Davidson atomizer with nasal tip, and its end can be easily passed between the vocal cords, by aid of the

mirror. In sensitive larynges local anesthesia of slight degree is needed. The instrument emits a coarse spray within the trachea. It has been suggested that a laryngeal syringe passed into the trachea would do equal service. The advantages of a spray are that minute amounts of concentrated solutions can be evenly applied to a large surface while the irritation caused by the necessarily large amounts of fluids of the same strength used in a syringe would be intolerable. Even in large quantity the fluid so injected would not apply itself as uniformly as if sprayed. For certain cases the tubes need to be of extra length to reach far enough down to enter the trachea.

The third instrument is a strong laryngeal applicator with a heavy handle through which the shank of the applicator passes so that it can be adjusted in length. The end of the instrument is fitted with a screw thread. It is quite impossible for cotton swabs wound on this to become detached. I devised the instrument as I found that the ordinary light laryngeal applicators with small handles were apt to rotate in the hand if the extremity touched any part of the pharynx or the epiglottis. The weight and firmness of the instrument fits it especially for vigorous applications of lactic acid to the tubercular larynx, or for massage of thickened laryngeal mucous membrane.

288 E. Huron Street.

Miscellany.

The Duration of Life.—The question is often raised whether the great advances in the arts and sciences have, after all, contributed to the prolongation of life. Such evidence as is accessible would seem to point in the affirmative. Thus, in England and Wales, during the period of 1841 to 1850, the death-rate among males of all ages was 23.1 and among females 21.6 per 1000, while during the years from 1886 to 1889, the death-rate was 20 per 1000 for males and 17.8 for females. It therefore appears that within fifty years there has been a clear gain of more than three lives in every thousand. The birth rate in England has, however, declined during the corresponding period, having been, in 1842, 32.6 per million of population, while from 1886 to 1890 it was 31.4.

The Postural Treatment of Bronchial Affections.—The physician often has reason to doubt the efficacy of his treatment of bronchial affections, particularly when these have become chronic, and some suggestions made by Jacobson (*Berliner Klin. Woch.*, 1900, No. 41, p. 904) in a recent communication may prove of practical utility in this connection. It is pointed out that the first indication in the treatment of all bronchitic disorders consists in removal of the morbid bronchial secretion. This is especially attended with difficulty in the presence of chronic processes, when the sensitiveness of the mucous membrane to irritation is diminished. Under such circumstances it is customary to replace the physiologic irritation resulting from the contact of the secretion with normal mucous membrane by chemical irritants—so-called expectorants. The resulting effect is general and not local, and stimulates increased production of secretion. Bronchiectatic processes, however, do not yield to such treatment; nor is the outlook for surgical intervention hopeful, inasmuch as the lesions are often multiple and bilateral. Quincke has proposed the removal of the accumulated secretion by gravitation, placing the patient in a prone position, with the head below the level of the body. In its gradual escape the secretion reaches healthy mucous membrane, which it irritates. It thus excites cough and expulsion, while at the same time air enters previously airless portions of lungs, respiration assumes more the costal type and the pressure of the abdominal organs upward on the diaphragm facilitates expiration. Besides, the expectoration can be regulated, so that it shall take place at stated intervals and not be continued throughout the day. Further, extension of the morbid process and the development by aspiration of bronchopneumonia and putrid decomposition are by this means prevented. The procedure is also applicable in the presence of fetid bronchitis. It is contraindicated when acute conditions or a single large abscess exists. Cylindrical bronchiectases are more favorably influenced than saccular. Pulmonary abscess and empyema are not well suited to this means of treatment. The patients are placed in the desired position for an hour morning and evening.

Therapeutics.

Renal Colic.

The following outline of treatment is given by Gould: For the acute attack hypodermic injections of morphin, gr. 1/4 combined with atropin, gr. 1/120 and repeated in two hours if necessary. Hot flannel cloths, stupes or poultices should be applied over the affected area. In recurrent attacks attention to elimination by the bowels, skin and kidneys should receive the proper notice. Rochelle salts 3iv. Epsom salts 3iv, or Carlsbad 5i-ii for the bowels, and one of the following prescriptions to promote diuresis and render the urine alkaline:

R.	Lithii citratis	3i	4
	Ext. hydrangeæ fld.	3iv	16
	Infusi tritici q. s. ad	℥vi	192

M. Sig.: One tablespoonful every four hours in water.

Hydrangea is an unofficial preparation, but is classified by Potter as of special importance in treatment of renal calculus by relieving the pain during the passage of renal concretions through the ureters or in promoting the removal of gravel from the bladder; or

R.	Lithii citratis	3i	4
	Pot. citratis	3iss	6
	Ext. zeæ fluidi	℥i	32
	Infusi uvæ ursi q. s. ad	℥vi	192

M. Sig.: One tablespoonful every four hours.

As a Laxative for Children.

R.	Mannæ	℥ss	16
	Magnesiæ—calcined		
	Sulphuris loti, āā	℥iss	48
	Mellis despumati q. s. ad	℥iv	128

M. Sig.: A tablespoonful to be taken in a cup of hot milk. The dose can be increased if necessary.

Follicular Tonsillitis.

R.	Creosoti	m. x	65
	Tinct. myrrhæ		
	Glycerini, āā	℥i	32
	Aquæ q. s. ad	℥iv	128

M. Sig.: Use as a gargle or spray four or five times daily.

ACUTE FOLLICULAR TONSILLITIS.

Dr. D. R. Brower has always derived splendid results from the use of the following combination, having first administered a mercurial or saline purgative:

R.	Potassii chloratis	3ss	2
	Acidi hydrochlor. dil	3ii	8
	Tinct. ferri chloridi	3iii	12
	Glycerini	℥i	32
	Syr. tolutani q. s. ad	℥iii	96

M. Sig.: One teaspoonful in water every two hours.

ABORTMENT OF FOLLICULAR TONSILLITIS.

The *Medical Council* states that follicular tonsillitis, if seen early, may be checked by swabbing the throat with the following:

R.	Potassii chloratis	gr. xxx	2
	Tinct. ferri chloridi		
	Glycerini, āā	3iiss	10
	Aq. destil. q. s. ad	℥i	32

M. Sig.: Swab the throat every two hours with this solution, alternating with a solution of peroxid of hydrogen, to be used in the same way.

After swabbing, a tablet of hydrargyri chloridum mite and sodium bicarbonate is to be dissolved in the mouth after each swabbing.

For the headache, soreness and other disturbances the following is recommended internally:

R.	Acetanilidi	gr. xxxv	2 33
	Camphoræ monobromatæ	gr. viii	5
	Sodii salicylatis	gr. xv	1
	Extracti hyoscyami	gr. ii	12

M. Ft. capsulæ No. xv. Sig.: One capsule every hour until relieved or until five have been taken.

For children the same treatment is recommended, except the mercurial tablets are stopped as soon as the bowels have moved freely and the last-mentioned capsules are proportionately reduced to the age of the child.

To Remove Tattoo Marks.

The "Clyclopedia of Med. Surgery" describes the method of Variot as follows: The skin is first covered with a concentrated solution of tannin, and retattooed with this in the parts to be cleared. Then an ordinary nitrate of silver crayon is rubbed over these parts, which become black by formation of tannate of silver in the superficial layer of the derma. Tannin powder is sprinkled on the surface several times a day for some days, to dry it. A dark crust forms, which loses color in three or four days, and in two weeks comes away, leaving a reddish scar, free of tattoo marks, which in a few months is but slightly noticeable. It is well to do the work in patches about the size of a dollar at a time. The person can thus go on with his usual occupation.

PAPAIN IN REMOVAL OF TATTOO MARKS.

Ohmann-Dumesnil recommends the following for removal of tattoo marks:

R.	Papainæ	3iss	6
	Acidi hydrochlorici dil	m. xv	1
	Aquæ destil	℥i	32
	Glycerini	℥iii	96

M. Rub the papain in a mortar while adding the mixture of water and acid, allow the paste to stand an hour, add the glycerin and in three hours filter. Sig.: For local application three or four times daily.

Eczema Capitis.

In this form of eczema, Joseph Max, in *Med. News*, prescribes the following to destroy the pediculi when present:

R.	Hydrarg. chloridi corros.	gr. i	06
	Vinegar	℥i	32

M. Sig.: Apply twice daily.

In a few days apply the following ointment:

R.	Hydrarg. oxidi rubri	gr. iv	25
	Sulphuris sublim.	gr. xx	1 33
	Ol. bergamotæ	gr. viii	5
	Vaselini q. s. ad	℥i	32

M. Sig.: Apply locally once or twice daily.

Treatment of Diabetes.

The *Ther. Gazette* contains the following combination containing boric acid, which it is claimed has been of curative benefit in treatment of diabetes. The cases in which it was used were young persons:

R.	Acidi borici	gr. xx	1 33
	Glycerini	℥i	4
	Liq. arsenici hydrochlor.	m. v	33
	Liq. strych. hydrochlor.	m. x	66
	Aquæ destil. q. s. ad	℥i	32

M. Sig.: To be taken at one dose and repeated three times a day.

The arsenic and strychnin preparations are of one per cent. strength as contained in the British Pharm., and consequently the above dose of strychnin is on the border line of danger and probably should never be prescribed in such size doses. It should be prescribed in doses of three to five minims.

For the Neuralgic Pains in Tuberculosis.

The following liniment is prescribed by the *Monthly Encyc. of Pract. Medicine*:

R.	Menthol.		
	Spts. chloroformi, āā	3iii	12
	Chloralis hydratis	℥ss	16
	Spts. camphoræ	3iii	12
	Alcoholis q. s. ad	℥iv	128

M. Sig.: To be applied locally and thoroughly rubbed in.

For the night sweats, the afternoon bath and friction, or the administration of atropin or argaracin, are usually sufficient; in persistent cases potassium tellurate in daily doses of one-half grain to be taken at night. For the irritating cough, unaccompanied by expectoration, heroin in doses of one-twelfth to one-sixth grain is valuable.

Headache from Eyestrain.

Dr. Casey A. Wood, in *Med. News*, states that this form of headache is most frequently encountered in strain of the ciliary muscles. He recommends very cold or very hot compresses, gently pressed over the closed eyes and forehead and advises them to be repeatedly changed for ten minutes, and repeated every hour while the headache lasts. For local application he recommends:

R.	Spts. camphoræ	℥ss	16
	Spts. lavendulæ		
	Alcoholis, āā	℥iss	48

M. Sig.: Apply locally; or:

R.	Camphoræ		
	Tinct. aconiti		
	Ol. menthæ pip. āā	℥i	4
	Chloroformi	℥ss	16
	Alcoholis q. s. ad	℥iii	96

M. Sig.: Shake well and apply every two or three hours.

He further states that relief may be obtained by applying the galvanic current to the eyes, using a current strength of three to five milliamperes, and placing the positive pole to the nucha, and the negative to the closed lids, for five or six minutes.

Ointment for Acute Eczema.

Wendle, in *Jour de Méd. de Paris*, recommends the following:

R.	Acidi camphorici	℥i	4
	Bismuthi subnitratis		
	Zinci carbonatis		
	Pulveris amyli		
	Vaselini		
	Lanolini (anhydrous) āā	℥ii	8

M. Sig.: Apply locally to the affected parts.

Ergot in Diseased Conditions of the Prostate.

E. R. Corson, in *Merck's Archives* recommends the following, which he finds useful, especially in congestion and inflammation caused by gonorrhea:

R.	Tinct. aconiti	℥i	4
	Tinct. gelsemii		
	Antipyrini, āā	℥ii	8
	Ergotol	℥i	32
	Aquæ destil. q. s. ad	℥iv	128

M. Sig.: One dessertspoonful in a wineglass of water every two or three hours.

He states that the action of ergot is aided by a combination with a potash salt, generally the bromid.

Ointment for Varicose Ulcers.

R.	Acidi carbol	℥ss	2
	Acidi borici	℥iiss	10
	Camphoræ	℥ii	8
	Ichthyol	℥v	20
	Ol. amygdalæ dulc.	℥iiss	10
	Ung. zinci oxidi	℥iiiss	112

M. Sig.: Apply externally night and morning.

Treatment of Epistaxis from Any Cause.

Dr. P. Chevallier, as quoted in *St. Paul Med. Jour.*, recommends injections of gelatinized serum prepared as follows:

R.	Sodii chloridi	℥ii	8
	Aq. destil	Oii	1000

M. To this solution add gelatin in proportion of 10 parts to the 100 and sterilize. This becomes solid when cooled, but can be warmed in a waterbath when needed. As an astringent powder the following is recommended:

R.	Acidi borici		
	Pulv. sacchari, āā	lxxv	5
	Antipyrini		
	Acidi tannici, āā	gr. xv	1

M. Sig.: To be blown upon the bleeding surfaces.

If it is not then checked, packing the nostril will have to be resorted to.

Treatment of Furuncles.

Philipson, as published in the "New Year-Book of Med.," recommends salicylic acid in 50 per cent. strength in treatment of well-formed furuncles. The following paste is applicable for such conditions:

R.	Acidi salicylici	℥i	32
	Pulveris amyli	℥i	4
	Lanolini	℥i	32

M. Sig.: Apply locally and change three or four times a day in order to hasten the necrotic process.

When the core has been eliminated, he advises treatment which will favor granulations. Minute furuncles may be checked by applying the following:

R.	Tincturæ benzoini	℥i	4
	Alcoholis—puri—q. s. ad	℥iii	96

M. Sig.: Apply locally three times a day.

In generalized furunculosis the parts should receive a warm bath daily and then be rubbed with the following:

R.	Acidi salicylici	gr. xxv	1.66
	Vaselini q. s. ad	℥ii	64

M. Sig.: To be well rubbed in over the affected area.

Societies.

COMING MEETINGS.

Southwestern Iowa Medical Association, Creston, Ia., Feb. 21, 1901.

Tri-State Medical Association of the Carolinas and Virginia, Richmond, Va., Feb. 26, 1901.

Medical Society of the Missouri Valley, Omaha, Neb., March 21, 1901.

West Texas Medical Association.—At the meeting of this Association, held in San Antonio, January 3, resolutions passed opposing the unrestricted sale of morphin, cocain and other poisonous drugs and favoring legislation in that direction.

Calcasieu Parish (La.) Medical Society.—The physicians of St. Charles and of Calcasieu Parish organized this Society, February 4, and elected Dr. Erastus J. Lyons, St. Charles, president; Dr. V. A. Miller, Lake Arthur, vice-president, and Dr. C. Pearl Munday, West Lake, secretary and treasurer.

Cripple Creek District (Colo.) Medical Society.—At the semi-annual meeting of this Society, held at Cripple Creek, January 30, the following officers were elected: Dr. William J. Chambers, president; Dr. Harry S. Torrance, and Francis J. Crane and Marion A. Latimer, Victor, vice-presidents; Dr. Benjamin B. Frankle, secretary, and Dr. J. Ernest Meiere, treasurer.

Quarter-Century Medical Club.—This Society, whose membership is made up of those who have practiced medicine for five-and-twenty years or more in Detroit, Michigan, held its annual meeting and banquet, January 30. Dr. Eugene Smith was elected president; Dr. H. A. Cleland, vice-president; Dr. John G. Johnson, treasurer, and Dr. Robert A. Jamieson, secretary.

Northeastern District Medical Society of Michigan.—This Society held its forty-ninth annual meeting in Flint, January 31, and elected Dr. Philip A. Knight, Utica, president; Dr. George S. Ney, Port Huron, vice-president; and Dr. A. Henri Cole, Port Huron, secretary and treasurer. This is said to be the oldest medical society in Michigan and takes in St. Clair, Macomb, Lapeer, Genesee and Sanilac counties.

Shawnee County (Kan.) Medical Society.—The Topeka Academy of Medicine and Surgery has been disbanded and the Shawnee County Medical Society was organized in its place, at Topeka, February 4, in accordance with the plan of the committee of THE AMERICAN MEDICAL ASSOCIATION. There were 24 charter members present, and the following officers were elected: Dr. Lewis Y. Grubbs, president; Dr. Herbert L. Alkire, vice-president; Dr. Josiah P. Lewis, treasurer, and Dr. William E. McVey, secretary.

Salt Lake Medical Society.—The last meeting of this Society was devoted to the steps to be taken to prevent the passage of the anticompulsory vaccination bill now pending in the legislature. A committee was appointed to guard the

prerogatives of the health board against any invasion. This committee will go before the legislative committee that has the bill in hand and lay before it the reasons for their opposition to the bill.

Eastern Hampden (Mass.) Medical Association.—The twenty-first annual meeting of this Association was held at Springfield, January 31, when these officers were elected for the ensuing year: Dr. Walter R. Weiser, Springfield, president; Dr. George W. Rawson, Amherst, vice-president; Dr. Vincent J. Irwin, Springfield, secretary and treasurer; Dr. George L. Woods, Springfield, censor. Dr. J. M. Fay, Northampton, read a paper on "Etiology." Dr. Angelo O. Squier, Springfield, was toastmaster.

PAN-AMERICAN MEDICAL CONGRESS.

Held in Havana, Cuba, February 4.

The Third Pan-American Medical Congress can not be said to have been a success in every particular. The scientific program, as printed, made one anticipate a large amount of scientific work, an anticipation that was not realized. A large number of those whose names appeared on the program were not present, and while a few of these sent their papers, many did not. This was especially noticeable as regards those from the United States.

The number present was far from satisfactory, and as a result the sections were very poorly attended. The following was the registration according to countries: Mexico, 7; Guatemala, 2; Nicaragua, 1; Argentine Republic, 3; Porto Rico, 3; Peru, 2; Venezuela, 2; Brazil, 1; Cuba, 26; United States 77; Canada, 2; Honduras, 1. The Congress being divided into twenty-two sections, many of these did not materialize as far as was observed. The sections on gynecology and abdominal surgery, general medicine and ophthalmology, seemingly, were the most interesting and attractive, and the number in attendance on the first two mentioned was often as great as fifteen or twenty, but a half dozen to a dozen was a common average in most of the sections.

The general sessions, from the point of view of those who understand Spanish, were more or less successful, but to those who did not speak the language of the Cubans it could hardly be said that they were entirely satisfactory. The first general session, which was dignified by the appellation "Solemn Inaugural Session," was held on Monday evening at the "Gran Teatro de Tacon," the largest theater in Havana. The house was filled with the elite of the city, in all the glory of full dress and Spanish beauty. The meeting was presided over by Dr. Wood, the Governor-General, whose few choice words of welcome were the only ones spoken in the English language. The secretary-general made his report, and the president of the Congress, Dr. Fernandez, delivered an address of welcome occupying about twenty minutes. Then followed the principal address of the evening, an hour long, by Dr. Eusebio Hernandez, the subject being obstetrics, certainly not a very appropriate one for a mixed audience, that is, from the view point of an American. Thus the entire evening, with the exception of the five minutes by General Wood, was occupied by those speaking Spanish.

Etiology of Yellow Fever.

The most important scientific development of the Congress was the report made by Dr. Reed of his experiments on yellow fever. Major Reed's request to General Leonard Wood for $5000 for the purpose of hiring men to submit to these experiments and to the bite of the mosquito was granted on condition that the men should be apprised of their danger and sign papers to that effect: "that it should be of their own free will in every particular, and that, in case of Spaniards, the Spanish consul's permission should be obtained." They were paid $250 each. Major Reed's paper is printed in full in this issue of THE JOURNAL, p. 431, also an editorial comment, p. 446.

DISCUSSION.

DR. LOUIS PERNA, Cienfuegos, Cuba, in opening the discussion, said that it is sophism to believe that *post hoc ergo propter hoc*, that is to say, that as Carmona, Freire, Sanarelli and others have fallen to this error, we must not be too precipitate in accepting the result of statistics. The studies made of mosquitoes are very old. A French physician, who died about 1850, expressed the opinion that malaria, yellow fever and cholera were propagated by mosquitoes. Dr. Perna also criticised the methods employed by the Commission in making experiments on human beings and is entirely opposed to such experiments.

DR. SAN MARTIN eloquently defended, and with strong arguments, the high scientific standard of the experiments as carried out by this Commission, and also brought out the point that it was not statistics but facts that this Commission presented.

DR. H. B. HORLBECK, Charleston, S.C., expressed his opinion that the problem of 200 years was about to be solved, that the old quarantine regulations should be greatly modified. He also described the existence of a pine belt within a short distance of Charleston, S. C., in which yellow fever never developed as an epidemic, although the afflicted therewith would go there during the existence of the epidemic in Charleston, would die from the disease and yet it would not spread. Mosquitoes are not known in that region, and probably this is the true explanation of the above fact. He concluded by emphasizing the inestimable value of these experiments if they prove to be true.

DR. EMILIO MARTINEZ, Havana, laid emphasis on Dr. San Martin's views. He took up the moral question and claimed that without these no truth could have been found.

DR. MANUEL GUTIERREZ, Mexico, who up to within a short time had been adverse to the theory of the transmission of this disease by mosquitoes, now accepted as incontrovertible the results of the experiments of the Commission. He followed with interest many of the experiments, and as a member of the Commission saw most of these cases, which he had no hesitation in pronouncing typical cases of yellow fever. A fact which impressed him forcibly was the absolute control of the epidemic by Dr. Reed. The cases would develop or not as he wished. He does not think that the mosquito should be called the Culex fasciatus. Giles' description of the Culex tiniad-mosquito agrees more closely than with the Culex fasciatus. He describes the difference between them. He is inclined to consider them a genus apart because they lay different eggs.

DR. C. FINLAY, Havana, expressed his admiration for the work of the Commission. He believes that this session of the Congress will go down in history as of great importance, and that the differences between his opinion and that held by the Commission will disappear in the course of time. He states that they were based on the fact that he investigated with three varieties of mosquitoes, while the Commission has been restricted to one variety; that the board was placed upon better footing for obtaining satisfactory results; that the negative result obtained by the inoculation of mosquitoes of short infection should not induce the Commission or the board to make such hard and biased rules as are evidenced in its conclusions.

DR. REED, in conclusion, said he was profoundly impressed with the interest and attention given to these experiments. In regard to the moral aspect of the case, he did not think that any one appreciated the position in which he found himself—the difficulties that beset his path. The first experiment was made on a member of the board, Dr. Carroll. The senior member expected to take his bite in turn, but was unexpectedly called north. As no animal could be given the disease, and it was useless to follow the previous indefinite experiments, it was absolutely necessary to make these experiments on human subjects, or otherwise volumes could have been written and discussed and yet we would have been no nearer the truth than at first. No progress could have been made toward an exact knowledge of the disease unless human subjects had been used. All experiments were performed upon persons who had given their free consent.

In reference to the remarks of Dr. Holbeck, of Charleston the disinfection of vessels should by no means be dispensed with, but only of such articles as bedding and clothing, though it is necessary to get rid of the mosquitoes, and this simplified the process of disinfection.

In regard to the remarks of Dr. Gutierrez, in reference to the name of the mosquito, Dr. Howard, of Baltimore, told him that Culex fasciatus is identical with Culex tiniads as described by Giles. Theobolt separates Culex tiniads from the genus Culex and places it in a new genus, Stegamina. These

lay their eggs in a peculiar way, and there is also a difference in the anterior claws of the male insect from those of the other Culex. There is also a difference in the larva of the Culex fasciatus. It is very interesting also to note the fact that this is the very mosquito that Dr. Finlay used in his experiments, and that this particular mosquito does not belong to the genus Culex, therefore malaria has a genus of its own, Anopheles, and yellow fever the genus Stegamina.

Resolutions on Dr. Wm. Pepper.

A committee consisting of Drs. R. G. Curtin and Hudson Makuen, both of Philadelphia, was appointed to prepare resolutions on the death of Dr. Wm. Pepper. It reported the following, which was adopted:

It is with unfeigned sorrow that we mourn the death of our honored president, Dr. Wm. Pepper, who organized the Pan-American Medical Congress, and who so ably and successfully presided over the first two meetings. To his wise supervision is due much of the success of the Congress since its inception. At this time we especially feel the loss of his guiding hand and his executive ability to help us in achieving still greater success. In our grief we are not alone, for many and various enterprises are hampered by the absence of his painstaking care. Let his example of untiring industry and the memory of his useful life spur us on to carry out the important work planned by our beloved president, Dr. Wm. Pepper. May the crown of glory which he richly deserves be his, is the prayer of his associates of the Pan-American Medical Congress.

Officers for 1903.

The next place of meeting is Buenos Ayres, in 1903. The committee representing the United States consists of Drs. C. A. L. Reed, Cincinnati, Ohio, president; A. Vander Veer, Albany, N. Y., vice-president; Ramon Guiteras, New York City, secretary, and H. L. E. Johnson, Washington, D. C., treasurer.

Attendance from the U. S.

The following registered from the United States: E. W. Andrews, Chicago; T. E. Bamford, New York; T. J. Bennett, Austin, Tex.; C. E. Bruce, New York; H. T. Byford, Chicago; S. Carnes, Washington, D. C.; S. C. Carson, Greensboro, Ala.; H. D. W. Carvelle, Manchester, N. H.; William Chandler, South Orange, N. J.; T. D. Crothers, Hartford, Conn.; Roland C. Curtin, Philadelphia; W. E. B. Davis, Birmingham, Ala.; Thomas McDavitt, St. Paul, Minn.; Arthur B. Duel, New York City; W. H. Earles, Milwaukee, Wis.; D. S. Fairchild, Clinton, Ia.; W. H. Findley, Altoona, Pa.; J. S. Foote, Omaha, Neb.; Louis Frank, Milwaukee, Wis.; Mamel R. Gatell, New York City; Frank Greene, Chicago; Jefferson D. Griffith, Kansas City, Mo.; J. F. B. Guillet, Ocala, Fla.; Ramon Guiteras, New York City; Henry Hammond, Killingly, Conn.; J. D. C. Hoit, Elmwood, Ill.; J. W. Holiday, Burlington, Ia.; E. Hollinghead, of New Jersey; William Jepson, Sioux City, Ia.; H. L. E. Johnson, Washington, D. C.; H. A. Kornemann, Newark, N.J.; George N. Kreider, Springfield, Ill.; Frank Le Morque, West Virginia; Hudson Makuen, Philadelphia; W. P. Manton, Detroit; J. L. Medina, New York City; H. Mitchel, Asbury Park, N.J.; J. B. McGaughey, Winona, Minn.; L. H. Montgomery, Chicago; N. C. Morse, Eldora, Ia.; J. Mullen, Houston, Tex.; Henry Parker Newman, Chicago; Arthur H. Nichols, Boston; Wm. P. Nicholson, Atlanta, Ga.; George H. Noble, Atlanta, Ga.; A. M. Phelps, New York City; S. Pilcher, Brooklyn, N. Y.; Nestor Ponce de Leon, New York; J. Porter, Key West, Fla.; W. E. M. Ranchous, Columbus, Ohio; A. J. Read, Battle Creek, Mich.; C. Roberts, New York; Reginald Sayre, New York City; George H. Simmons, Chicago; A. G. Sprague, River Point, R. I.; Thomas L. Stedman, New York City; J. H. Stoddard, Pueblo, Colo.; C. B. Sweeting, Key West, Fla.; F. C. Valentine, New York City; W. A. K. Vance, Bristol, Tenn.; A. Vander Veer, Albany, N. Y.; E. Van Hood, Ocala, Fla.; B. T. Whitmore, New York City; M. C. Wyeth, U. S. A.; Walter Wyman, Washington, D. C.; Henry B. Young, Burlington, Ia.

(To be Continued.)

COLLEGE OF PHYSICIANS OF PHILADELPHIA.

Section on Gynecology.

Meeting January 17.

John C. DaCosta, M. D., Chairman.

Cancer of the Cervix and Pelvis Following Supravaginal Hysterectomy.

DR. CHAS. P. NOBLE read a paper, on this topic. He said that one of the arguments used in favor of total as against supravaginal hysterectomy for fibroid tumors of the uterus or for extensive inflammatory disease of that organ and its appendages, was that in a definite percentage of cases the cervix, if left in the pelvis, subsequently becomes the seat of carcinoma. A few cases of this kind have been reported, and these are always referred to in papers written from this standpoint, so that it is made to appear that there is considerable risk of carcinoma if the supravaginal hysterectomy is employed instead of total hysterectomy. His own experience, which embraced more than 175 supravaginal hysterectomies for fibroid tumors, and a larger number for inflammatory diseases of the appendages, had not borne out this contention, but on the contrary indicates that carcinoma following supravaginal hysterectomy is an exceedingly rare occurrence. On March 7, 1895, the following case was operated on in his own service at the Kensington Hospital for Women. Mrs. D., aged 35, who had had three children and one miscarriage, had suffered from menorrhagia and had had numerous attacks of pelvic peritonitis. Abdominal section disclosed a fibroid tumor of the uterus the size of a cocoa-nut, a left ovarian cyst and a right hydrosalpinx. These structures were adherent in the pelvis and the tumors were edematous and infiltrated with inflammatory products. Supravaginal hysterectomy was performed, removing the ovarian tumor and appendages, the fibroid tumor and the corpus uteri. The atypical condition of the tumor was noted but attributed to the repeated attacks of peritonitis, from which the patient had suffered. She made a fairly good recovery, and was discharged from the hospital on April 7. Unfortunately no detailed study of the specimen was made and no microscopic sections were examined.

Four months after the operation the patient began to bleed irregularly from the vagina. Eight months after the operation Dr. Applebach made a pelvic examination and found that the pelvis, vagina and cervix were involved in an extended carcinoma. The patient died a few months later, about one year after the operation. As the specimens from this case were not examined it is impossible to say definitely which was the primary seed of the carcinoma, but in view of the history both before and after the operation there is good reason to believe that a carcinoma of the body of the uterus existed as a complication of the fibroid tumor at the time of the operation, and that this disease had already involved the broad ligament when the hysterectomy was performed. This case was reported not so much because of its value in itself as because of the negative value of his own experience with reference to the appearance of carcinoma in the cervix left after a supravaginal hysterectomy. This was the only one which he had made and in this there was every reason to believe that unrecognized carcinoma existed at the time of operation.

Ovarian Cyst: Suppuration: Hematocele.

DR. GEO. ERETY SHOEMAKER read a paper on this subject. D., married, aged 48, with eight children and no miscarriages, was a patient of Dr. Fries. She had been tapped several weeks before coming under observation, and ten quarts of thin chocolate-colored fluid removed, disclosing a remaining mass in the upper abdomen. The abdomen had rapidly become again distended on her admission to the Presbyterian Hospital, and then contained a large cystic tumor which was somewhat irregular on its upper surface and presented many of the characteristics of an ovarian cyst, except that a possible origin in the upper abdomen could not be disproved. Eighteen months before, when her last child was born, no tumor was felt. The patient was very stout, was jaundiced, and had a very irritable stomach, while a trace of albumin and a few hyaline casts ap-

peared in the urine. At the operation the tumor was found to be a cyst of the left ovary and was removed. The ovary of the opposite side contained a small hematogenous cyst and was removed with the hydrosalpinx of the same size. The semi-solid contents of chocolate-colored fluid measured about 10 quarts. Adhesions were marked over the anterior surface of the tumor, probably owing to the tapping. There were considerable adhesions to the transverse and descending colon and a considerable stripping of the peritoneal cover occurred on the left side. Some uncertainty was felt as to the complete control of hemorrhage from an area in the mesocolon near the sigmoid flexure. There was some tendency to subperitoneal bleeding; as it did not appear to be persistent or definite after some hesitation irrigation with hot saline solution was used and the abdomen closed. There was much fatty deposit behind the peritoneum and about the large intestine, the patient being somewhat obese. She recovered slowly, after much vomiting for the first day or two, a symptom to which she had been subject for some time. The patient was most unruly and difficult to manage. The slight jaundice persisted. About a week after the operation a pelvic examination was made and there was found, distending the tissues around and between the rectum and the vagina, and on both sides of the uterus, a more or less indurated mass. This became quite hard, but about four weeks after the operation gradually softened and obscure fluctuation was obtained behind the cervix, the temperature being at this time irregular, with some sweating and a feeling of rectal pressure. The diagnosis of pelvic hematocele which was undergoing suppuration was made. The source of the blood was thought to have been the vessels in the mesocolon and in the neighborhood of the sigmoid which had been injured in the separation of the strong adhesions in this region. Incision immediately behind the cervix gave exit to several ounces of blood and of pus with small black clots. The cavity from which this came was shallow, very irregular in outline, and appeared to contain shreds of blood-clots which had not yet broken down. A drainage-tube was inserted and iodoform gauze packed in the vagina. Under careful irrigation the discharge became rapidly diminished and the patient's temperature became normal and remained so. Complete recovery followed. This collection of blood must have been subperitoneal, as it surrounded and more or less fixed the rectum. After it had become consolidated the pressure on the rectum was a source of great distress to the patient, who complained rather of pressure than of pain. She had considerable difficulty in having a stool, owing to the presence of this induration. The vaginal incision was made about five weeks after the laparotomy. The jaundice disappeared in about eight weeks. She was discharged in good condition.

Salpingitis: Obscure Localized Symptoms.

DR. SHOEMAKER also reported this case: H. H., 25 years old, single, colored, was admitted to the wards of the Presbyterian Hospital with a history as follows: Her previous health had been good. She menstruated normally. In August, 1900, three months before admission, she had an attack of abdominal inflammation characterized by vomiting, pain in the right abdomen opposite the umbilicus, slight jaundice, and irregular temperature—103 degrees. She slowly recovered, but afterward had more or less distress in the lower abdomen, referred to the region of the appendix. This distress was increased by lifting and working. Two days before her admission the patient, while menstruating, had gotten her feet wet washing a pavement. The next day she had chilliness, great pain all over the abdomen, vomiting, constipation and elevated temperature. She was admitted to the surgical ward with the supposed diagnosis of appendicitis. The doctor was asked to see her in consultation with the surgeon on duty. When seen by him she had been ill five days. The tongue was coated a dirty white, somewhat dry, and while vomiting had been severe it had ceased. There was slight jaundice, the face was anxious and the greatest pain complained of was in the region of the gall-bladder; the epigastric tenderness, however, was most marked on both sides, just above Poupart's ligament, and the muscular rigidity, while not marked, was present in the left abdominal quadrant, and the tenderness extended up over the region of the appendix. The tenderness being too great for a pelvic examination, ether was given for diagnosis, with the result that nothing could be felt in the upper abdomen and no mass in the region of the appendix. In Douglas's cul-de-sac were felt prolapsed coils of intestine which, when displaced, gave the sensation of the parting of very slight adhesions. Both tubes and ovaries were slightly enlarged and thickened; the uterus was restricted in mobility and forward.

The diagnosis of acute salpingitis was made, with the reservation of a possibility of a coincident involvement of the appendix. On this diagnosis the patient was transferred to the gynecological department, under his care. As the attack was five days old, the temperature range was improving, vomiting had ceased, and the pulse was good, ranging below 40. The expectant treatment was continued and ice was ordered over the lower abdomen. During the next week the point of greatest tenderness varied from the epigastrium to McBurney's point, and across the whole lower abdomen. At times palpation of the epigastrium was impossible. The muscular rigidity, however, disappeared in the lower abdomen, and the general condition gradually resumed its normal appearance, except for the slight pelvic tenderness. The patient was confined to bed and the attack allowed to subside, and, five weeks after the onset, abdominal section was performed. Owing to the slight jaundice, the persistent high location of pain and tenderness, and the rather slight situation of the inclination, it was supposed that the appendix would be found involved with the tubes. The incision was, therefore, made one inch to the right of the median line and through the right rectus muscle. The inflammatory disease was found to involve chiefly the uterus and adnexa, the appendix dipping down into the pelvis, however, and was slightly adherent by its tip to the enlarged right ovary, but its walls were not inflamed and there were no adhesions throughout its continuity. It was, therefore, not removed. There was capillary congestion and a roughening of the peritoneum over several coils of small intestine in the lower abdomen. The omentum was slightly adherent to the anterior pelvic brim. Both tubes and ovaries were buried in dense adhesions. The right tube was contorted and the uterine extremity normal for about an inch. The fimbriated extremity was completely destroyed by inflammation. Two pockets of inflammatory material occupied the lumen of the tube, the outer one containing yellowish pus in flakes, the inner one swollen rugæ covered with flakes of inflammatory lymph. The right ovary was buried with the tube and under the inflammatory exudate contained a cyst of 1½ inches in diameter. Its contents were thickened and bloody fluid. The tube and ovary were with some difficulty freed, tied off and removed. The left ovary, when freed from adhesions, was found to be nearly normal in size. The left tube was inflamed and three-fourths of an inch in diameter. After separation from its bed of adhesions, bloody, semipurulent material could be squeezed from its outer opening. There was free oozing from the fimbriæ and from the adhesions, even after irrigation and sponge pressure. The lifting of the tube was considered unsafe on account of the free oozing and the danger of infection from the tubal contents. It was, therefore, removed with a portion of the corresponding ovary, the remaining portion of the ovary being left with the hope of maintenance of some function. Irrigation with saline solution, careful peritoneal toilet of the wound by through-and-through silkworm gut sutures and catgut to the aponeurosis was followed by satisfactory recovery.

DR. C. P. NOBLE cited the case of a patient treated for salpingitis by an able medical man. She had had three recurrent attacks in his hands, when the speaker was called in consultation. Three physicians agreed that the patient had salpingitis, so he operated. The appendix was in the pelvis, was inflamed, and agglutinated in a mass of exudate was the appendix, the ovary and tube. Under these circumstances a correct diagnosis was impossible; the exudate was in the pelvis, where it would be found if the disease was salpingitis. In the appendicular region the parts felt normal on palpation. Under these circumstances it was impossible to make a diagnosis. In the case referred to by Dr. Shoemaker, where the tubes were

thickened and could be definitey made out, he thought the diagnosis was much more simple.

DR. SHOEMAKER, in closing the discussion, said, in regard to the post-operative hemorrhage that he thought it was subperitoneal for the probable reason that, on opening the collection, it was found occupying the median line, involving Douglas's pouch. In one case the mass was as large as a child's head, obliterating the vagina behind but not involving the sides of the uterus, vagina or rectum. In two other cases, occurring recently, the Douglas pouch had been opened and there the same definite location of the collection in the median line found. Subperitoneal hemorrhage is quite possible and is sometimes seen in operations where the vessel is low down, particularly in extrauterine pregnancy. Sometimes the whole floor of the pelvis has filled with blood and there is considerable difficulty in controlling the hemorrhage.

His second case was not reported as one of pelvic abscess due to appendicitis, but as a case of salpingitis with some few symptoms of appendicitis, probably reflex. He had been in the habit of examining the appendices and in 10 per cent. of all cases of abdominal section also removed the appendix.

The differential diagnosis can usually be made between appendicitis and salpingitis by the menstrual history being abnormal in the case of salpingitis; by the normal feeling of the tubes when examination is conducted under the influence of ether, bimanual examination demonstrating the normal condition of the tubes; by the lower situation of the inflammatory mass in case it is tubal—this is particularly demonstrable through the rectum; by the characteristic history of appendicitis, the short onset without the causes which would tend to produce salpingitis, the sharp onset of localized pain and muscular rigidity being alike in both conditions. Vomiting is not common in salpingitis as it is in the intestinal lesion, and the pain is referred to the epigastrium in appendicitis but not in salpingitis. In the case reported this symptom made the diagnosis more difficult.

CHICAGO SOCIETY OF INTERNAL MEDICINE.

Regular Meeting held January 15.

The President, Dr. John A. Robison, in the chair.

Chlorosis.

DR. GUSTAV FUETTERER read a paper on "Chlorosis, Its Diagnosis and Treatment, and Its Relation to Tuberculosis and to Round Ulcer of the Stomach." This will be printed in THE JOURNAL.

The Blood in Anemia.

DR. JOSEPH A. CAPPS followed with "A Preliminary Report on Some Observations of the Blood in Anemia." He said that, in order to fully understand the pathology of the various anemias, we must definitely determine whether the destruction of blood is general or selective in character; whether the blood loss takes place in the serum or corpuscles; whether the cell in giving up its hemoglobin also loses its protoplasm. The brunt of the attack is undoubtedly borne by the corpuscles, for however important a rôle the serum may play in its chemical functions, it undergoes relatively slight physical changes in either health or disease. No material alteration takes place in the specific gravity of the blood serum in most of the severe pathologic conditions, with the exception of hydremic and post-hemorrhagic states, while the influence of the physiologic taking in and execretion of liquids is slight (Schmaltz). The researches of Hammerschlag, V. Limbeck, and others have taught us that varations in specific gravity of red corpuscles, e. g., changes in their chemical affinity for iron, of the blood as a whole depend primarily on disturbances of the changes in their number and their size and changes in their ability to absorb or lose water.

A priori an increase or diminution of the hemoglobin might be explained entirely on the basis of chemical affinity without regard to the size of the cell body, and this view is held by many hematologists. From this standpoint we may consider that in anemia qualitative changes of a degenerative character lessen the power of the corpuscle to take up iron. On the other hand, there is much evidence to show that quantitative as well as qualitative changes take place in the cell and influence the hemoglobin content.

Several methods have been used to calculate the size of the red cells. Measurement of the cell diameter with a micrometer ruling has afforded fair results, but this gives one dimension only. The depth can be told roughly by the presence or absence of a central light area in the red corpuscle which takes a faint stain; or by observing the thickness of the disc when lying on edge in a fresh drop. These methods obviously are inaccurate and unreliable.

The centrifuge yields the only satisfactory results, taken in conjunction with a careful count of the red cells with a Thoma-Zeiss instrument. The percentage volume of the red cells as a whole, as obtained from the graduated capillary tube, is divided by the percentage number of red corpuscles, which gives the percentage volume of the individual corpuscle.

For this quotient he is aware of no term that has been employed; he therefore suggested the name of "Volume Index," which is self-explanatory and is easily associated with the familiar term "color index." Thus a reading of 45 on the tube=90 per cent.; the red cells number by count 3,750,000 or 75 per cent.; then 90/75=1.20 volume index or an increase of 20 per cent. above the normal in the volume of the average cell.

It is generally believed that the erythrocytes are smaller than normal in chlorosis and larger than normal in pernicious anemia, but very few observers have accurately measured these variations and studied their relations to the hemoglobin and blood as a whole.

Herz (*Virch. Archiv*) claims to have found acute swelling of the cells without a rise in the hemoglobin after hemorrhage and peritonitis. He says that the cells in chlorosis are swollen or normal, never small. A chronic hypertrophy was found by him in Hodgkin's disease and in cachexia, while an atrophy of cells occurred in certain secondary anemias. Von Limbeck observed enlargement of the cells by measurement of diameters in catarrhal jaundice.

Thus we see that in chlorosis and most secondary anemias we have a lowering not only of the color index, but of the volume index as well. Without doubt the color loss precedes in time the loss in size and is always much more pronounced. In one case the color index fell to .45, whereas the volume index never fell below 5.7. Mild cases, or those recovering, exhibit a normal volume index while the hemoglobin is still deficient.

The process of impoverishment seems very similar in chlorosis, and the so-called secondary anemias except for the tendency of the red corpuscles in chlorosis to resist more successfully a reduction in number. As a result of this fact recovery is more rapid in chlorosis. There are, however, many cases of chlorosis where the number of cells and the volume index are much lowered, and these patients get well slowly, resembling secondary anemias. Conversely we must bear in mind instances of secondary anemia that are poor in hemoglobin, but almost normal in the number of red cells. Many examples occur, therefore, where it is impossible to state from the blood examination whether they are chlorotic or of the secondary type, and lead us to believe that chlorosis is but one of the clinical varieties of secondary anemia.

In pernicious anemia, instead of a shriveling of the red cell, we have a hypertrophy to correspond with the heightened color index. This hypertrophy does not simply *keep up* with the high color index—it nearly always surpasses it by a safe margin. Since the most sweeping destruction of red corpuscles takes place in this disease, we may look upon this increased size of the remaining cells as a sort of compensatory hypertrophy that largely enhances their efficiency in carrying on the work of oxidation. The highest volume index was 1.93, which indicates an average cell capacity almost twice the normal. This makes it easier to understand how life can be maintained with 500,000 red corpuscles or less to the cubic millimeter.

Bearing on this idea of compensatory hypertrophy he has observed that a similar process tends to operate in *all forms* of anemia where the red cells have been depleted to 2,000,000 or less. As the count falls below this point we see more and

more macrocytes, the volume index tends to increase, the color index rises until both the latter may be normal or above. Hence it is possible for a secondary anemia which has been characterized by a steady loss in cell size and color to reach such a low point that the cells must grow larger in order to sustain life.

There are many other conditions where a knowledge of the volume of the cells may be able to throw some light on pathology, such as jaundice, hydremias, cyanosis and hemorrhage, and these he hopes to study before completing his report.

A study of 14 cases of chlorosis shows that the red corpuscles in all cases have a smaller average diameter than in normal blood. The color index is constantly very low, while the volume index is decreased to a less degree.

The red cells in 24 cases of secondary anemia are also subnormal in diameters. The color index is not so low as in chlorosis. The volume index falls also, but never so much as the color.

The size of the corpuscles in 17 cases of leukemia and the relation of hemoglobin to volume is essentially the same as in secondary anemia. Thirty-one cases of pernicious anemia give a decided increase in the average diameter of the cells. The color index is high and the volume index still higher.

Hydriatics in the Treatment of Chlorosis.

DR. G. W. MCCASKEY, Fort Wayne, Ind., read a paper on this subject. He especially disclaimed any intention of advocating hydrotherapy as an exclusive method of treatment, but urged its careful use in selected cases as a most valuable aid. The treatment, he maintained, should be based on a proper conception of the principal pathologic facts, among which were mentioned the oligochromemia, oligocythemia and oligemia. Especial stress was laid on the oligemia as not being fully recognized in dealing with chlorosis, and as indicating a great impairment of the hematogenic organs. Because of the marked decrease in the total mass of blood which undoubtedly exists the blood count may be normal with a serious degree of oligemia. The weakness of the heart with more or less dilatation; a general lowering of the blood pressure because of the heart conditions and vasomotor states; the resulting impairment of function of all the principal organs as a necessary result of the preceding conditions; and the retention of subcutaneous and intravisceral fat and hypoazaturia as a result of defective oxidation and lowered metabolism; and hypoplasia of cardiovascular and genital organs the common embryonic origin of which from the mesoblast was pointed out as a possibly significant fact, furnish the principal indications for therapeutic procedure.

While the administration of iron was advocated, the exceedingly small amount absorbed, coupled with the better therapeutic results claimed from tremendously large daily doses, points to an indirect action of the iron upon the alimentary tract.

The rest treatment in conjunction with iron, the importance of which most recent authorities emphasize, was pointed out as an important factor in permitting recuperation of cardiovascular tone, and in so doing improving the functions of the digestive organs and of the red bone-marrow upon which hematogenesis is absolutely dependent. Some recent writers report cases treated by rest alone, without iron, with favorable results. The writer believes that there is a radical fault in the organ concerned in making red blood cells—which in the human subject is the exclusive function of the red bone-marrow and that the treatment must be directed toward improving the functional activity of this important tissue. The quality of chlorotic blood is the same as that produced by overworked blood-making organs, the parallelism with the final stage of post-hemorrhagic anemia being especially striking. No single therapeutic measure can so directly influence the nutrition and functional activity of the bone-marrow as hydrotherapy. Its anatomical surroundings remove it from all but indirect methods, and after supplying abundance of iron with such a degree of rest as is indicated, forced feeding and special treatment of any organ that may need it, the indirect results of hydriatic measures can favorably modify the bone-marrow in accordance with well known physiologic laws. The observations of Schüller on the vessels of the pia mater after thermal stimulation of the skin; of Naumann, who demonstrated the partial reflex character of these phenomena, and of Winternitz, whose plethysmographic tracings demonstrated the increased volume and tension of blood in areas removed from the direct impress of cold and heat, were cited as a physiologic basis of hydriatic treatment, concerning the efficacy of which the writer has satisfied himself by a considerable personal experience, supporting the views of Struempell, Winternitz, Immermann, Baruch, and others.

Various methods are available, such as the full bath, spray, douche, etc., the guiding principles being to use that degree of stimulation from which the patient will show a healthy reaction, and to use cold very guardedly and as a rule preceding its application by a storage of heat which will permit of the stimulating and tonic influences of cold without resulting depression.

Chlorosis and Metabolism.

DR. FENTON B. TURCK followed with a paper in which he discussed metabolism and the advent of puberty at considerable length. He likewise dwelt on Herring's view of metabolism and its possible applications, and then passed on to a consideration of the relation of metabolism to function. The selective power of cells and the assimilation of inorganic compounds were mentioned. Relapses and failures of treatment by iron were largely due, in his opinion, to the non-recognition of the important rule of metabolism. He detailed his observations on methods of treatment based upon physiologic laws.

DR. FRANK BILLINGS stated that chlorosis occurs in young women somewhere between 13 and 14 and 22 years of age, on the average. It also exists in young men at that age, but the majority of writers do not accept this. Men in whom chlorosis occurs are of a feminine type, and show it in their physique. Chlorosis occurs in girls where there is a large number in the family, though there are exceptions to this. Dr. Billings touched briefly on the different theories that have been advanced regarding chlorosis. If it is a question of metabolism, why does chlorosis select girls? It is a disease one finds in all climates and under all conditions of life. He has seen quite as many cases among servant girls as among others, and has had a large number of cases among the well-to-do. He does not think there is any hygienic basis for chlorosis. It is not due to impaired nutrition, because it occurs among the children of the rich as well as those of the poor. When he had charge of ward 24, in the Cook County Hospital, he had on an average one case of chlorosis in every fifty patients.

In the treatment, he mentioned beef juice. His objection to it is that patients soon disliked it. To take a pint of beef juice every day requires not only great moral force on the part of the patients, but considerable persuasion by the physician to get them to do it. More people can afford milk than the juice which comes from five pounds of beef. He has gone on year after year, until simply at sea, so to speak, as to whether one preparation of iron is any better than another. On the whole, however, he considers the old tincture of iron the best, because it contains hydrochloric acid. It can be given in good doses, say five or ten, or even fifteen or thirty minims. By diluting the iron with pure glycerin, the patients do not object to it, and they feel and do better on tincture of iron than upon any other preparation.

DR. JAMES B. HERRICK said that there are many cases of chlorosis unrecognized, consequently untreated, and a great many, though recognized, are neglected by the patients themselves, or by the families, and allowed to go untreated. This is important, because untreated chlorosis may give rise to serious results. It is probable that a permanent impression is made on these patients that is never removed. Trousseau made the statement that when a patient had well-developed chlorosis, the impression made on her was never eradicated, and it was such a patient who, in later years, became nervous, neurasthenic or prematurely old, so that it was very important that the cases should be recognized early and properly and promptly treated. He emphasized the importance of watching patients for a long period of time. The greatest difficulty he

has had in treating cases of chlorosis is to get them to return to him for observation for as long a period as he desires. As soon as these patients improve a little, and feel so much better, many of them believe themselves fully recovered, consequently the physician sees no more of them, even though the nature of the disease is fully explained to them.

He regrets the tendency that prevails, to look upon chlorosis as a secondary anemia. It can not be denied that the blood findings are those of secondary anemia. If chlorosis is to be considered as a secondary anemia, it is a class by itself, and it is a secondary anemia in the sense that pernicious anemia is secondary, but physicians do not know the cause of it, and until they do know the cause of pernicious anemia, and of chlorosis, they should look upon them as distinct entities, as the essential anemias, so-called. If physicians looked upon chlorosis and the secondary anemias as practically one and the same thing, the profession would be in great danger of making serious mistakes in diagnosis—at least, so far as the welfare of patients is concerned. He hesitates to make a diagnosis of chlorosis until he has excluded tuberculosis, and on his history sheets not infrequently there is written "Chlorosis," with a note, which reads: "Look out for tuberculosis." And whenever he has a patient with what he calls chlorosis, and has given to her iron in considerable quantity, and fails to see a primary response to the iron, he begins to think there is a mistake in diagnosis; just in the same way that when a diagnosis of late syphilis is made, and the iodid of potassium does not produce immediate response, he fears, perhaps, it is not syphilis; or when a diagnosis of malaria is made and quinin does not promptly relieve the fever, and that then, perhaps, some mistake in diagnosis was made.

DR. CHARLES S. BACON alluded to the habit of tight lacing among young girls during puberty or early adolescence, as a possible causal factor of chlorosis. Tight lacing, he thinks, interferes with respiration and with digestion, and by interfering with digestion it also interferes with the intestinal functions. As tight lacing had some influence in causing constipation, so it will have a bearing on the production of autointoxication, to which several observers have directed attention as being a probable important causal factor. In the hydrotherapeutics of chlorosis the impairment of respiration demands the removal or abandonment of tight lacing.

NEW YORK COUNTY MEDICAL ASSOCIATION.

Meeting held January 21.

Parker Syms, M. D., president.

Pathologic Condition of Houston's Valves.

DR. JAMES P. TUTTLE, in presenting a specimen of this condition, stated that although seventy years had elapsed since Houston had first described these valves in the rectum there were some at the present day, notably Matthews, who even disputed their existence. The specimen, which had been taken from a man of 45, settled conclusively the question of their existence, and showed them in this instance to be markedly hypertrophied. The rectum was almost occluded by two folds of mucous membrane. It was supposed that they afforded additional support to the column of feces, and he is disposed to believe that in some cases at least they may be responsible for the occurrence of obstipation.

Lupus Treated with Galvanocautery.

DR. W. S. GOTTHEIL exhibited a young woman in whom a lupus of the face had been converted into nearly normal skin by the use of the galvanocautery.

Lupus Vulgaris Treated by Static Electricity and the X-Ray.

DR. A. C. GEYSER read a paper on this topic, and exhibited two patients. One of these, a young woman, had been treated unsuccessfully for considerable periods of time, at almost every dispensary in the city. The other was a man on one side of whose face the *x*-ray had been used, and on the other the static spray. The former was free from hair and smooth. The author said that many methods of treatment had been devised, but none had so nearly approached being a specific treatment as the Roentgen ray. His method consisted in placing between the patient and the *x*-ray tube a screen of lead, with a perforation opposite the diseased area. A "soft" tube should be employed, and daily exposures given at first. The worst case that he had treated by this method, one of nine years' duration, had required forty treatments, but others only eight or ten applications.

DR. W. S. GOTTHEIL said that some of those present had seen this woman's condition prior to this treatment, and did not hesitate to say that the result was very remarkable. It was certainly new to him, and while elaborate apparatus was required, it should certainly prove very useful for the more obstinate cases.

Exophthalmic Goiter of Syphilitic Origin.

DR. R. ABRAMS reported three cases, giving a direct and undoubted history of syphilitic infection, and improving with significant rapidity under appropriate syphilitic treatment. The first had come under observation with an early syphilitic eruption. This had been dissipated by mercurial inunctions, and she had then been lost sight of for six months. On returning, there were mucous patches in the mouth, and a noticeable exophthalmic goiter, associated with dyspnea, tachycardia and great nervousness. This complication had not been benefited by the use of the ordinary remedies for this disorder, but on giving large doses of the iodid of sodium for the relief of nocturnal headache, the exophthalmic goiter had disappeared. The other two cases were quite similar.

DR. C. W. ALLEN said that syphilis had often been mentioned as a predisposing cause of exophthalmic goiter, but it was new to ascribe to it such a prominent rôle in the etiology. Iodin and mercury have long been known to be of service in exophthalmic goiter, even when applied externally, yet he has never heard of any postmortem findings in this class of cases pointing to syphilis as a cause.

DR. W. M. LESZYNSKY said that in a rather large experience he had not seen a single case of exophthalmic goiter which had seemed to him to have been caused by syphilis, though it was not improbable that the mental depression associated with syphilitic infection might act as a predisposing cause. The so-called therapeutic test should not be interpreted too rigidly, for it is well known that many non-syphilitic inflammatory exudates are dissipated by the use of iodid or mercury.

Cystoscopy in the Female by an Improved Method, with Demonstration on the Cadaver.

DR. WILLIAM R. PRYOR read a paper on this subject and gave a demonstration of the method. His cystoscope consists of a main tube for inspection and a tube at the side for illumination. The latter extends beyond the inspection tube so that no rays can enter that one. It is important to remember that if the patient assumes the knee-chest position, as in Kelly's method, the very part of the bladder which it is most important to examine will be hidden from view unless certain special devices are used. To obviate this difficulty he recommended that the patient be placed in the lithotomy position and then the head of the table lowered to an angle of about 45 degrees. The refraction which the rays of light must necessarily undergo when the examination is made through water makes this method undesirable, and for other reasons it is apt to introduce other sources of error. With the patient in the position mentioned, on admitting air to the bladder, the latter assumes the shape of an equilateral triangle, and readily exposes to view even the pubic and peritoneal surfaces.

DR. F. TILDEN BROWN said that the instrument presented was worthy of high praise, and most useful for purposes of class demonstration, as well as for the simultaneous collection of separate specimens of urine from the two ureters. He insisted that the results of such an examination and analysis are far more exact if the two specimens are collected simultaneously. For this purpose he preferred to use a double-barreled instrument.

DR. PRYOR said that with the double-barreled instrument if tubercle bacilli are found in both specimens it is no proof that both kidneys are tuberculous, and Harris's method is an absolute failure.

PHILADELPHIA COUNTY MEDICAL SOCIETY.

Meeting held Jan. 9.

President, Dr. J. H. Musser, in the chair.

Gunshot Wound of the Head.

DR. W. L. RODMAN presented a patient who had been wounded in the Philippines. He was 24 years of age and had, in October, 1899, received a gunshot wound in the parietal region, and point of exit was found in the upper part of the occipital. The patient had been under the impression that the wound was produced by a Mauser bullet, and stated that after the injury he became dazed, while afterward unconsciousness came on. The wound being on the left side of the head, there was slight paralysis on the right side. The man suffers from intense headache, and at times appears to be in a state of non compos. Skiagraphs have been taken, showing a foreign body imbedded in the brain substance, and located several inches from the point of entrance of the wound. The question to decide is whether to operate or not.

DR. L. WEBSTER FOX had made an examination of the eye-ground of the man and found the veins and arteries normal. He believed, however, that an operation would prove beneficial.

DR. F. SAVARY PEARCE read a few notes of the case. The optic center had doubtless been injured to a certain degree, as had the internal capsule. He believed that an operation was indicated. Skiagraphs were then exhibited demonstrating the location of the foreign body.

Hemoglobinuria Complicating Typhoid Fever.

DRS. J. H. MUSSER and A. O. J. KELLY read a paper on this subject. The latter referred to the literature on the subject, and spoke of the infrequency of this complication. Many modern text-books do not mention it at all. Curschmann had seen two such cases, and Osler had reported one. The patient was a colored man, aged 23 years. The family history had been negative. On Aug. 27, 1900, he had complained of headache, anorexia and, later, fever set in. A typical attack of typhoid became manifest, with rose spots, diarrhea, etc. The Widal reaction had been positive, and tub baths had been used to control the fever. After a few days' treatment hemoglobinuria came on and lasted six or seven days.

Perforation and Perforative Peritonitis in Typhoid Fever.

DR. WILLIAM OSLER, by invitation, read a paper on this topic, pointing out that until a comparatively recent date, when perforation in typhoid fever occurred, the physician could only fold his arms and await the inevitable consequence. But through the efforts of Leyden, of Germany, and J. C. Wilson, in this country, a change in opinion is apparent, and we can congratulate ourselves that the mortality in typhoid is lower than it was a quarter of a century ago. It is not the complications, such as hemorrhage and perforation, which produce death in the majority of cases, but it is the fatal toxemia. He had found that of 63 cases of typhoid treated at the Johns Hopkins Hospital during a certain period, only one-third had died of perforation. This same rate had not diminished by continuous observation, but there had been a reduction in the number of deaths from toxemia. Accidents of the former character may be divided into two stages: 1, the perforation, and 2, the peritonitis. The indications in such cases are to operate within the first twelve hours after a perforation has occurred. The speaker then detailed the history of 3 cases of typhoid, in order to demonstrate the symptoms and clinical signs of a perforation of the intestine.

In the best equipped hospitals a typhoid patient should not be left in the care of a resident physician, but a skilled man should be constantly in charge. He had drawn up a series of instructions to guide the residents at the Johns Hopkins Hospital: 1. Notify the house physician at once of any marked change in the patient's condition, or any evidences of collapse. 2. The house physician should note the onset of this change, whether intense pain, and whether relieved by ordinary measures, or whether it increased in severity. 3. The state of the abdomen, whether flat or scaphoid, or distended, the character of the respiration, sweating, muscular rigidity; the percussion note, and area of liver dulness. Auscultatory percussion may be of advantage. Examination should be made every three hours. 4. Whether there had been any change in the facial expression, or sudden drop in the temperature with sweating and acute pain. 5. A study of the leucocytes—whether increasing. The speaker stated that in some cases he had noted an increase, but not in all. The red cells should be counted and the hemoglobin estimated. A diminution of the last two might denote impending hemorrhage.

Comparing the results obtained in the treatment of cases of typhoid fever as observed in the war in South Africa, and in the Spanish-American War, it should be noted that in the former instance the mortality had reached 20 per cent., while in the latter it was 7.6 per cent. The speaker believed that the statistics furnished by the physicians composing the army board was the greatest indictment against the diagnostic ability of the members of the profession yet presented.

Of a large number of cases of typhoid operated on for perforation of the bowel, 42.5 per cent had recovered. At the Johns Hopkins, of 16 so treated, 6 recovered, and the speaker believed that when this complication was promptly recognized and treated we would have a means of saving 50 per cent. of the patients.

DR. MORDECAI PRICE, in discussing the paper, detailed a history of several cases of typhoid which he believed might have recovered had an operation been done. He was under the impression that it was best to operate in all cases of perforation.

DR. ERNEST LAPLACE thought that the lesson to be drawn was clear—the surgeon should stand in close relation to the physician in the treatment of typhoid. This relation might be the same as that in the treatment of appendicitis.

DR. JAMES TYSON believes that the main point in this condition was the difficulty of diagnosis. He detailed a case in which there had been sudden abdominal pain, great tympany and other evidences of perforation which had subsided within a short period, and he believes there had not been a perforation. Another important point in the treatment of this condition was the area of the bowel involved. He had also observed, in one instance, pain referred to the end of the penis, referred to by Dr. Osler.

DR. JOSEPH PRICE was glad that a paper of this kind had been read by a physician and not by a surgeon. He had a series of 22 cases, with 10 recoveries. As to resection of the bowel in cases of typhoid, he believes that most die. He believes in an open wound and drainage in these cases.

DR. G. G. DAVIS referred to the difficulty in finding a perforation during an operation for this condition. In one instance he had operated on a patient with typhoid under the impression that there was a perforation, but none could be found. In this instance he observed that the patient made an uneventful recovery and stood the operation well. Simple flushing out of the abdominal cavity seems to do good.

DR. M. H. FUSSELL referred to a case in which there had been obliteration of the liver dulness. Four hours later all symptoms had disappeared. He did not know what the real condition was.

DR. W. L. RODMAN thought that if an operation was done at all it should be done early. He referred, however, to the reports of Treves and Sir William MacCormac, who had frequently detailed instances in which soldiers had been shot through the bowel, and in whom no operation had been done, and yet recovery had taken place.

DR. OSLER, in closing, stated that he could not recall one instance in his experience in which there had been a recovery from typhoid when a perforation existed. The first fifteen or twenty hours is the most important to the patient. In these cases, what if one should make a mistake when we have a means at hand which if employed might restore to health 50 per cent. of the patients?

Current Medical Literature

Titles marked with an asterisk (*) are noted below.

Medical Record (N. Y.), February 2.

1 *Radical Cure of Inguinal Hernia. A. M. Phelps.
2 The Treatment of Puerperal Fever. H. J. Boldt.

3 *An Operation for the Relief of Stoppage of the Tear Passage, Abscess of the Sac, etc. Erasmus A. Pond.
4 The Malarial Mosquito on the Susquehanna. Harvey B. Bashore.
5 Placenta Previa or Detached Placenta. George W. Squires.

Philadelphia Medical Journal, February 2.

6 *Scurvy, Not Rheumatism. J. P. Crozer Griffith.
7 *Whey-Cream Modifications in Infant Feeding. Franklin W. White and Maynard Ladd.
8 *Proper Methods of Handling Milk for Infant Feeding. George T. Palmer.
9 *The Importance of Instruction in Medical Schools on the Modification of Milk for Prescription Feeding. Andrew H. Whitridge.
10 Intracranial Hemorrhage in the Newborn. W. Reynolds Wilson.
11 *The Causes and Treatment of Urgent and Serious Conditions in the New-Born. Samuel Wolfe.
12 *Otitis Media in Children and its Treatment. H. V. Würdemann.
13 *A Critical Review of the Literature of Mastoid Disease and its Complications. Seymour Oppenheimer.
14 *Diseases of the Ear in Relation to General Medicine. Nathan G. Ward.
15 *Infantile Colic and Colic in Infants. H. Illoway.
16 *The Diagnosis and Treatment of Some Functional Forms of Defective Speech. G. Hudson Makuen.
17 *The Summer Cold: Swimming Pools as an Etiologic Factor. Lawrence F. Flick.

New York Medical Journal, February 2.

18 *A Preliminary Communication with Projection-Drawings, Illustrating the Topography of the Paracœles (Lateral Ventricles) in their Relations to the Surface of the Cerebrum and the Cranium. Edward C. Spitzka.
19 A Case of Arsenical Dermatitis. A. H. Ohmann-Dumesnil.
20 *On the Sterilization of Milk: Its Advantages and Limitations. A. D. Blackader.
21 *Gall-Stones and Empyematous Gall-Bladders. Edwin Ricketts.
22 Appendicitis in the Female. Floyd Wilcox MacRae.
23 *Pharyngeal Adenoids, their Frequency and Sequelæ. Philip D. Kerrison.

Medical News (N. Y.), February 2.

24 *Fatty Degeneration of the Heart. Thomas E. Satterthwaite.
25 A Case of Puerperal Sepsis from Retained Lochia (Lochiometra), with Remarks. George P. Shears.
26 *Medical and Sociological Aspects of the Galveston Storm. H. A. West.
27 Infantilism. W. T. English.

Boston Medical and Surgical Journal, January 31.

28 *The Treatment of the Later Phases of Heart Diseases. John L. Heffron.
29 Peritonsillar Abscess. F. C. Cobb.
30 Retropharyngeal Abscess in the Adult. J. L. Goodale.

Cincinnati Lancet-Clinic, February 2.

31 Inguinal Hernia. B. Merrill Ricketts.
32 *Mechanical Means for Inspection of the Rectum. J. Ambrose Johnston
33 *Some Theories for Which I Should Like to See the Profession Try. W. O. Owen.

St. Louis Medical Review, January 26.

34 A Résumé of the Literature of Spinal Anesthesia. M. B. Clopton.

February 2.

35 The Evolution of My Technique in the Treatment of Fibroid Uterine Tumors. Howard A. Kelly. Is it Extra- or Intra-Peritoneal Treatment of the Pedicle, Total Hysterectomy or a Combination of Both. Mary Dixon Jones.

Medical Fortnightly (St. Louis), January 25.

36 Observations Based on the Probable Mode of Formation of Urinary Stone Relative to its Recurrence and Prevention. Reginald Harrison.
37 Huntington's Chorea; Hysterical Insanity with Generalized Analgesia. Charles G. Chaddock.
38 Diseases of the Stomach. J. M. G. Carter.
39 Women in Medicine in Germany. Josephine Milligan.

Medical Age (Detroit, Mich.), January 25.

40 Adenoid Growths of the Post-Pharynx. George H. Gorham.
41 The Perversions of the Sexual Instinct. N. E. Aronstam.
42 Hysterical Phenomena Simulating a Diverticulum of the Esophagus. Carl Weidner.
43 A Plea for Pay Hospitals for Contagious Diseases. J. H. Adams.

American Practitioner and News (Louisville, Ky.), January 1.

44 Epilepsy. Thomas H. Baker.
45 Osteomyelitis. Irvin Abell.
46 The Two Sides. (Relations of Physician and Public.) J. J. Wakefield.
47 Is Vivisection Useful? Symington Brown.
48 A Case of Appendicitis in Which a Lumbricoid Worm Passed Through the Ruptured Appendix into the Peritoneal Cavity. Paul H. Schwankhaus.
49 A New Obstetrical Forceps. Ernest G. Mark.

Journal of Nervous and Mental Diseases (N. Y.), January.

50 Diffuse Degeneration of the Spinal Cord. (To be continued.) James J. Putnam and E. W. Taylor.
51 Report of a Case of Brain Injury, with Peculiar Whistling Spells Following Operation. William C. Krauss.
52 *Brush Massage. Frank R. Fry.

American Journal of Obstetrics (N. Y.), January.

53 Dermoid and Other Cysts of the Ovary: Their Origin from the Wolffian Body. (To be continued.) Samuel W. Bandler.
54 *Arteriosclerosis of the Uterus; with Report of a Case of So-Called "Apoplexia Uteri." Palmer Findley.
55 The Element of Time in Operations. James N. West.
56 *Two Rare Tumors. (1) A Calcereous Uterine Fibroma, and (2) a Fibromyoma of the Urethra. H. G. Wetherill.
57 A Case of Pregnancy in the Rudimentary Horn. Emil Ries.
58 Cesarean Section for Cancer of the Rectum. J. M. Baldy.
59 A Case of Malignant Chorion Epithelioma or So-called Deciduoma Malignum. Abram Brothers.
60 Vaginal Hysterectomy. Carl Strobell.

Kansas City Medical Record, January.

61 Rabies. Arthur H. Wall.
62 Report of Cases—Infected Tumors—Removal. Herman E. Pearse.

Annals of Gynecology and Pediatry (Boston), January.

63 *Gastro-Enterostomy with the Murphy Button in Malignant Obstructions of the Pylorus. Frank T. Meriwether.
64 *Anteflexion—Its Importance and its Operative Treatment. Rufus A. Kingman.
65 *Clinical Memoranda Relating to Appendicitis. Andrew F. Currier.
66 Abdominal Drainage. A. L. Beahan.
67 *Does a Hole in the Drum-Head Destroy the Hearing: A Popular Delusion Regarding the Human Ear. Edmund D. Spear.

Albany Medical Annals (N. Y.), January.

68 On the Influence of a Hospital upon the Medical Profession of a Community William Osler.
69 Address: Historical Sketch of the Troy Hospital, 1850-1900. C. E. Nichols.
70 Further Notes on Abnormalities of the Urinary System. George Blumer.
71 Surgical Anesthesia by Spinal Subarachnoid Cocainization—The Corning-Bier Method. Willis G. MacDonald.

Journal of Tuberculosis (Asheville, N. C.), January.

72 *Tuberculosis of the Middle Ear. Alfred Bruck.
73 Tuberculosis of the Knee-Joint and Other Cases of Orthopedic Surgery. Daniel W. Marston.
74 *The Use of Iodol in the Treatment of Tuberculosis of the Lung. T. Mellor Tyson.
75 A Case of Tuberculous Polyneuritis. Charles J. Aldrich.
76 Care of Tuberculosis. Mrs. Lew Wallace, Jr.

Toledo Medical and Surgical Reporter, January.

77 The Early Diagnosis of Gastric Cancer with a View to its Radical Cure. G. W. McCaskey.
78 Diabetes Mellitus. C. Storx.

Canadian Journal of Medicine and Surgery (Toronto), February,

79 Furuncle in External Ear—Nasal Obstruction and Paresis of Soft Palate. Percy G. Goldsmith.
80 Electro-Therapeutic Sins. H. Newman Lawrence.
81 Rhus Glabra in Enuresis. J. J. Cassidy.
82 Among the Tomes. (Early Canadian Medical Literature, etc.) W. A. Young.

New Yorker Medicinische Monatsschrift, January.

83 *Erfahrungen mit Cocainanaesthesie. F. Kammerer.
84 Sanatogen in der Kinderpraxis. J. G. Wm. Greeff.
85 *Aspirin. A. Toepfer.

The Laryngoscope (St. Louis), January.

86 Some Critical and Desultory Remarks on Recent Laryngological and Rhinological Literature. Jonathan Wright.
87 *Rheumatic Fever in Relation to the Throat. St. Clair Thomson.
88 *Spongyfying of the Labyrinth. J. Holinger.
89 Improvements in Ear Specula. S. S. Bishop.
90 Sarcoma of the Naso-Pharynx, with Report of Cases. John O. McReynolds.

American Journal of Surgery and Gynecology (St. Louis), January.

91 Bottini's Operation for Enlarged Prostate. Geo. M. Phillips.
92 *Drainage in Abdominal Surgery. J. W. Long.
93 How a Country Doctor Treats Chronic Cystitis. Fred S. Clinton.
94 Abdominal Section for Pus-tubes. A. C. Bernays.

95 Operation for Appendicitis which Did Not Exist. E. N. Wright.
96 Abdominal Section for Old Adhesions—One for Fibroid Tumor and One for Complicated Pelvic Lesions. Emory Lanphear.
97 A Reply to Dr. Lanphear's Criticism of the Methods of Eastern Surgeons. Seneca D. Powell.
98 Who Should Operate, and When?—Something of the Relation between the Physician and the Surgeon. Clarence H. Vaught.
99 A Case of Double Intra-Ligamentous Cyst, with Remarks. C. Jeff Miller.
99½ The Treatment of Noma. G. W. West.
100 Removal of a Child's Head by Abdominal Section—Recovery. J. A. Walker.

Medical Herald (St. Joseph, Mo.), January.

101 Double Ureter—Report of a Nephrectomy Done upon a Young Child with this Condition Present. J. E. Summers, Jr.
102 *Spondylolisthesis John P. Lord.
103 *Contusions of the Eye Producing Obliterating Hyphema. N. F. Weymann.

Carolina Medical Journal (Charlotte, N. C.), January.

104 A Case of Syncytioma Malignum with Metastases in the Vagina. H. A. Royster.
105 The Management of Cardiac Dilatation. Herman B. Allyn.
106 A Plea for the Early Treatment of Hypertrophied, Faucial and Pharyngeal Tonsils. L. E. Norfleet.
107 Drinking-Water and the Mosquito as Causes of Malarial Fever. Charles R. Grandy.

Merck's Archives (N. Y.), January.

108 *The Rational Treatment of Pulmonary Hemorrhage. William J. Robinson.
109 Therapeutic Management of Typhoid Fever. Aurele Nadeau.

Southern Practitioner (Nashville, Tenn.), February.

110 Anesthesia and Anesthetics. W. R. Sifford.
111 Successful Hip-Joint Amputation for Tubercular Osteomyelitis by Wyeth's Bloodless Method. Tilman Ramsey.

Dominion Medical Monthly (Toronto), January.

112 *Notes on Gastroptosis, with Reports of Cases. Graham Chambers
113 Double Conical Stump Following Amputation of Both Arms in Utero. Walter McKeown.

Alabama Medical Journal (Birmingham), January.

114 An Unusual Case of Late Syphilis of the Testicle. Dyer F. Talley.
115 Vital Questions in Medicine (Tuberculosis, etc.) T. A. Casey.
116 Broncho-Pneumonia. F. P. Hixon.
117 Eclampsia. E. O. Williamson.
118 Scarlatina. W. M. Cunningham.

Southern California Practitioner (Los Angeles), January.

119 Meniere's Disease—Report of a Case. S. D. Hopkins.
120 *The American Cigaret. F. A. Seymour.
121 Treatment of Acute Opium Poisoning. F. D. Bullard.
122 The Lodge Question. John C. King.
123 Climatology of California. C. G. Stivers.

Southern Medical Journal (La Grange, N. C.), January.

124 Address before Seaboard Medical Association. R. H. Lewis.
125 Oration. The Excellence of Enlightened Effort. J. Emmett Sebrell.
126 *Comparative Value of Laboratory and Bedside Diagnosis. E. C. Levy.

Charlotte Medical Journal, January.

127 *Concerning the Etiology of Asthma. John Dunn.
128 Osteoplasty of the Cranium for Tertiary Lesions of syphilis—Details—Recovery. J. E. Massey, Jr.
129 *Perineal Lacerations. W. C. Brownson.
130 The Syringe and How to Use it. H. S. Lott.
131 The Treatment of Neuralgic and Rheumatic Affections. D. S. Maddox.
132 The Surgical Treatment of Cancer of the Stomach. Frank T. Meriwether.

AMERICAN.

1. **Inguinal Hernia.**—Phelps reviews the methods and history of the operative treatment of hernia and describes his own method of using the silver-wire mattress. He contrasts the Bassini and Halsted operations, pointing out their distinctive features, and claims as original in his own operation the reproduction of large masses of inflammatory material to restore the abdominal wall and the introduction of fine silver-wire filigree through the entire inguinal canal, over the transversalis fascia, adding to the strength of the weakened parts, and preventing stretching of the new material. The cutting off the hernial sac and retreating from the operation exactly as from an abdominal operation, and stitching of the peritoneum and transversalis fascia with a continued suture of fine silver wire, and also the use of fine silver wire with continued suture are claimed as original. He sterilizes this by thorough boiling and steaming, and by putting it in pure carbolic acid a few minutes before operation, after which he dips it into alcohol, holds it over an alcohol flame and thus thoroughly sterilizes it. Drainage should be avoided if possible.

3. **Drainage of Lachrymal Sac.**—The operation described is devised for the free drainage of the lachrymal sac, relieving epiphora and obviating any danger of abscess in one operation. Probing, Pond finds, has been unsatisfactory. The operation is very simple; a long silver probe, with one end blunt and the other with an eyelet large enough to carry a coarse silk string, is threaded and passed through the canal into the nose, where the end is seized with a pair of forceps and drawn out through the nostrils. The probe is then unthreaded and the string left in position with the ends tied together. The string is worn about one week, being drawn through the nose two or three times a day. In tying he makes quite a knot which, when pulled through the canal, makes an opening. He has used this operation for the past four years with good results. The canaliculus may be slit or not as deemed advisable. Most of the operations have been under cocain, but in some he has used ether. There is no pain after the first operation and the string can be drawn without causing any harm. In abscess of the sac the string gives good drainage. Three cases are reported which were severe and of long duration, but were promptly and permanently relieved.

6. **Infantile Scurvy.**—Crozer Griffith reports sixteen cases of infantile scurvy in which the symptoms illustrate the likeness which the title of his article indicates. In all the cases it was evident that a dietetic fault was at work, but just which one was not always clear. He believes that the use of commercial infant foods may have causal relation to the condition in children, and there are cases on record in which sterilized milk seemed to be the cause. He thinks this, however, is overrated; still it is to be considered. The earliest symptom is usually pain in the legs, and disorders of the gums naturally can not be found in children who have no teeth. They may occasionally have scurvy without pain, and failure to make the diagnosis is not to be regarded as a reproach to any physician. The treatment of the disease is simple. The use of fresh fruit juice has worked almost miraculous cures.

7. **Whey Cream.**—White and Ladd summarize the results of their studies on the effect of whey-cream modifications in infant feeding as follows: By the use of whey as a diluent of cream of various strengths they are able to modify the proportion of caseinogen and whey proteids of the cow's milk closely to the proportion of human milk. The best temperature for destroying the rennet enzymes is 65.5 C. Whey or whey mixtures should not be heated above 69.3 C. to avoid coagulation of the whey proteids. The percentage of whey proteids obtained by them was 1 per cent., while in the analysis of the whole milk, approximately three-fourths of the total proteid was caseinogen and one-fourth whey proteid. On the basis of this analysis they were able to obtain whey-cream mixture with a maximum of .9 per cent. and a minimum of .25 per cent. of whey proteid with percentages of caseinogen varying from .25 to 1 per cent., fats from 1 to 4 per cent., milk-sugar from 4 to 7 per cent. The emulsions of fat in whey, barley-water, gravity cream, and centrifugal cream mixtures were the same, both in their macroscopic and microscopic appearances. The combination of heat and transportation which may act together in hot weather, partly destroys the emulsion in all forms of modified milk, but this can be prevented by keeping the mi cool during delivery. Whey-cream mixtures yield a much finer, less bulky and more digestible coagulum than plain modified mixture with the same total proteids; the coagulum is equalled in fineness only by that of barley-water mixtures. The coagulum from gravity cream mixture and centrifugal cream mixtures is the same in character.

8. **Proper Methods of Handling Milk.**—Palmer describes the methods in the Gurler farm, at De Kalb, Ill., the results of which seem to be very successful.

9. **Milk Modification.**—Whitridge pleads for instruction, in medical schools, on the methods of modification of milk for prescription feeding. He thinks that especially in the South there is a deficiency in this respect, but more or less in all parts of the country.

11. **Urgent Conditions in the Newborn.**—The conditions mentioned by Wolfe are those of premature births, plural births, pressure on the umbilical cord, on the head, and on the thorax, and toxic states of the fetal blood incident to parturition, as well as certain conditions which seem to be inherent in the germ. He gives directions as to reviving asphyxiated infants, maintaining that the method first adopted should be carried out as far as possible uniformly and the after-treatment of the child be given careful attention. He advises clean lard inunctions over the whole body, afterward rubbed off in the first cleansing of the child, and in the case of a weakened child we should always have enough absorbent cotton on hand to make a cotton envelope for the infant. He calls attention to the necessity of sometimes using stimulants, of which he advocates atropia or nitroglycerin made up from the ordinary hypodermic tablets, a teaspoonful of the solution containing from 1/2000 to 1/3000 of a grain of atropin, while the trinitrin solution should contain a similar fraction of a drop of the 10 per cent. solution. A dose of either may be given and the effects watched, and ordinarily repeated from two to six times in twenty-four hours as a stimulant to circulation and respiration.

12.—See abstract in THE JOURNAL, XXXV, p 51.

13. **Mastoid Disease.**—Oppenheimer reviews the symptoms and authorities in mastoid disease and its more serious complications.

14. **Ear Disease in General Medicine.**—The relation of ear disease to various disorders, mumps, influenza, nasal and nasopharyngeal affections, lung disorders, diseases of the alimentary tract, typhoid fever, syphilis, rheumatism, neuritis, cardiac disorders, kidney disease, gastro-intestinal diseases, eye diseases and drugs are all noted

15. **Colic.**—This disorder is an irregular peristalsis of the small intestines, a contraction of the various muscular coats of the intestinal tract accomplished with such violence that the nerve filaments are unduly compressed and pain produced. The causes of infantile colic are enumerated: 1. Flatulence, which may be due to some congenital deformity of the child itself, in its defective development, etc., or it may be the fault of the mother either in her diet or attention to the bowels. Drugs, emotional disorders, etc., on the part of the mother, may have their effect, and it may be due to overfeeding or to improper quality of the food, and sometimes underfeeding may be the cause of colic. Refrigeration, leaving the child lie too long in a wet condition, may be the cause. Illoway does not think swallowing of air has any special effect in this way. It is possible that malarial influence may be at work. The symptoms are discussed in detail, with special reference to the cause, which is an important matter of treatment. For immediate relief the aromatics or carminatives have been employed from time immemorial, and several prescriptions are given. At first, in his early practice, he employed opium, but has found that certain simple remedies were as efficient. He has found nothing superior to milk of asafetida, which is taken readily by most infants and is innocuous. One of the principal things, however, is removal of the cause. When it lies in the infant there is not much to be done except to relieve as far as possible the pain and give attention to the bowels. The diet in the mother and child should be given careful attention.

16. **Speech and Its Defects.**—Makuen discusses the defects of speech due to various causes, to defective hearing and to defective psychic apparatus. In the development of the child attention should be given to this last point, and babbling and prattling should be encouraged in a quiet way. Early examination of the organs of speech should be made whenever there is any sign of defects, and hypertrophied tonsils and all irregularities be looked after. Stammering is not due to arrest of development, but to certain defects of the nervous system. He describes his plan of treatment in these cases. The approximate cause of stammering is a functional derangement of the nervous mechanism of speech causing an incoordinated action of the hitherto automatic peripheral apparatus. There is only one rational way and scientific method of producing normal action, that is physiologic exercise, the patient conscientiously endeavoring to gain control over the entire muscular system with especial attention to those parts immediately concerned with the processes of speech. Some ingenuity may be necessary sometimes to determine just what particular exercise is best suited to each individual case, and great care and perseverence may be needed.

17. **Summer Colds.**—Flick gives his experience and that of his family with summer colds, which he attributes to the use of a swimming bath. There is very little doubt in his mind that the infection was conveyed in this way, directly through the water. He regrets that he was unable to give a bacteriologic study, but at the time his attention was called to the facts and the material was available he had not the opportunity.

18. **Lateral Ventricles.**—Spitzka gives diagrams, taken from life, of the position of the ventricles, with special reference to the surgical procedure of tapping, which he assumes has a future. The diagrams are very instructive. He calls attention to the sources of uncertainty that will have to be taken into account, such as variability in relation to portions of the brain, that is, of the external surfaces of the cranium. The condition differs in different individuals. For the purpose of effecting an entrance into the cavity of the ventricles, the safest road would seem to be the one which is directed into the trigonum, the roomiest part of the ventricle and the least variable. The article is most intelligible in connection with the illustrations.

20. **Milk Sterilization.**—The effects of heat on the bacterial flora of milk are described by Blackader, who sums up his results by saying that milk, in sterilization by heat, is altered to an extent varying according to the elevation and duration of the temperature used. The proteids are modified and rendered apparently less digestible, though our knowledge is yet imperfect in this regard. The combination of saline ingredients is probably more or less broken and the salts assume conditions in which they are less readily absorbed. The natural ferments, whose presence in milk it may be inferred is to assist digestion in the infant's stomach, are destroyed. An alteration takes place in the emulsion, which may also have a distinct effect in lessening the digestibility of cow's milk by the infant. He also points out that it is very important that the milk, after sterilization, must be kept at a low temperature, and this, used for many days, is not free from danger. He therefore thinks it very desirable in infant feeding, to use fresh milk drawn with careful precautions against contamination, and in which the lactic-acid-producing bacteria are present in such small numbers as to induce no important alteration. Such milk had better not be sterilized, but since we can not always obtain it, the lesser of two evils is to have the milk sterilized at the lowest efficient temperature, viz., 60 C. maintained for fifteen minutes.

21. **Gall-Stones.**—Ricketts protests against dependence upon the internal use of drugs and methods of poulticing in cases of pus formations, and favors cholecystotomy with drainage. The latter, through the abdomen and gall-bladder, must be maintained until we are confident that no stones remain in any biliary space that can be explored by a probe. He thoroughly washes out the bladder after removal of the calculi, and frequently finds others brought away. He thinks that if cholecystotomy is the primary operation for removal of the gall-stones, the few cases in which there may be recurrence can be dealt with more successfully by a secondary cholecystotomy if need be, than by any one of the other procedures named for their primary removal. As regards surgical intervention, he objects to two tempo operations, which he thinks are to be condemned.

22. **Appendicitis in Females.**—McRae reports several cases of appendicitis in women, and thinks that the disease is frequently overlooked in the female. Diagnosis is much more difficult. It usually occurs at or about the menstrual time, and is often attributed to genital troubles. The pain of appendicitis, he says, is more sudden in its onset and more acute than that of pelvic disease. It is frequently combined with nausea and vomiting. Muscular spasm is marked; while practically absent in pelvic disease, disturbance is very much greater and progress more rapid. An intact hymen argues strongly for appendicitis. When in doubt and the symptoms are aggressive it is safer to make a diagnosis of appendicitis and operate than to delay until the case is hopeless.

23. **Adenoids.**—The conclusions of Kerrison's article are that pharyngeal adenoids are much more common than generally supposed in children; that cases of moderate development are often not recognized; that growths of moderate size, though not necessarily accompanied by marked symptoms at the time of their development, are often responsible for grave conditions during adolescence or in adult life; that unless removed, in nearly all cases they are accompanied by more or less impairment of hearing; that the presence of adenoids does not greatly add to the gravity of the intercurrent disease and makes the patient more susceptible to tubercular and diphtheric infection; that the periodic examination in children for this should become a routine measure; that moderate cases, no less than the extreme ones, demand surgical treatment; that the treatment should aim at complete ablation and removal of the growth and is best done under general anesthesia.

24. **Fatty Degeneration of the Heart.**—According to Satterthwaite, this is a common affection, though it is not to be classed as a disease *sui generis*, but rather as a metamorphosis or process attending on loss of compensation and valvular disease and nearly as often in non-valvular. It is caused by fevers, toxemias, dyscrasias, disorders of nutrition, and mechanical injuries. It may also be a physiologic process, as in senility or after parturition. For practical purposes he divides it into three stages: 1. Early, in which the prognosis is best for a complete recovery. 2. Intermediate, in which the arrest of fatty processes *in toto* is hardly probable, but the affection may be so improved that the patient need not be seriously disabled. In this we may have a physiologic if not a pathologic cure. 3. In the final stage, marked by such profound implication of internal viscera that their functions are in abeyance, the prognosis is always bad and the end will hardly be delayed beyond a few months.

26. **Galveston Storm.**—West gives his experiences and observations in connection with the recent Galveston storm, and notices the unsanitary conditions of overcrowding and filth and general impairment of sanitation that followed the disaster, together with the excessive high temperature, increase of disease-bearing insects and temporary failure of the water-supply. There seems to have been an increase of malaria in the place since the storm, and gastro-intestinal catarrh and dysentery were prevalent for a while. Typhoid fever also made its appearance and scarlet fever, diphtheria, epidemic influenza and dengue occurred, though thus far not epidemic. Many cases of mixed infection were noted. The city is still far from a sanitary condition, as there is no proper system of sewage.

28. **Heart Disease.**—Heffron thinks the treatment of the later stages of heart disease should be guided: 1. By the condition of the heart, that is, when compensation fails, it should be relieved of all extra work, and absolute rest in bed is what he recommends for this purpose. 2. The volume of the blood should be diminished as much as possible, and mainly by the use of such hydragogue cathartics as least disturb the general conditions. The remedies he advocates, in order of their importance, are elaterium, calomel and salines, but at the same time the diminution of ingested fluids must be insisted on. 3. The nervousness of the patient which increases the work of the heart must be controlled. For this he recommends ice-bags for temporary relief, but medicines that act upon the nerve centers have to be relied upon. The alkaloids of opium, codein and morphin are first, and he thinks heroin is a fraud. In some cases where the nervousness is not extreme, he has good results from the use of the abstract of cannabis indica made by the late Dr. William Manlius Smith, which is uniform and efficacious. He uses this first as a rule, often adding the others. The next point is the diet, which must be managed so as to be nutritious, not very bulky, and easily digested. When dropsy comes on he recommends hot-air cabinet baths together with a purgative. The use of cardiac stimulants is also noticed as affecting the muscles of the heart, and also the Schott treatment, and general exercises under the direction of a physician. If compensation can be restored, as it often can, the patient should still be kept under observation and avoid excessive demands on his powers.

32. **Inspection of the Rectum.**—Johnstone describes the instruments, protoscope and anoscope, used in examining the rectum, and the technique of their employment, also a table specially adapted for this purpose. He considers, in conclusion, Houston's valves, noticing particularly Mathews' opinion that they do not exist. He is as certain that they do exist as that the soft palate does, though whether they should be called valves he does not venture to say. In fact, he thinks they are comparable to the soft palate to some extent in efficiency and function.

33. **Some Medical Questions.**—Under the heading, "Some Theories for Which I Should Like to See the Profession Try," Owen notices the lay management of hospitals, which he thinks should give way to medical administration, the discipline of irregular and non-ethical practitioners, etc. He does not think, however, that a physician should be prevented from patenting a valuable medicine or appliance. The principal point is that the physicians should try to obtain control of hospitals and all their details, also of boards of health, and should insist that all men who are allowed to practice medicine should at least be qualified by education. He thinks there should be a branch of the judiciary whose sole function should be the control of public health matters, and all practitioners of medicine should be within that court's jurisdiction.

52. **Brush Massage.**—Fry recommends the use of a dry bristle brush for the purpose of massaging, and claims it has many advantages over the ordinary methods. It is easily learned and can be taught to the ordinary nurse. As he employs it, it consists in kneading all exposed portions of the body with the brush, keeping it in contact with the skin and manipulating with a circumductory and creeping movement with varying rapidity and pressure. The dry brush adheres to the skin, bringing with it the superficial structures in a way that can hardly be described, but can be appreciated on trial. Specially constructed brushes are not necessary. From a good assortment of flesh brushes, one can always select a suitable one for the purpose. He claims that it has an excellent effect on tics, tabes, neuralgia, neurasthenia, hysteric and neurasthenic aches and pains, especially on the neck and back paresthesias.

54. **Uterine Arteriosclerosis.**—This condition has not been much mentioned in English literature though its existence is not questioned. Findley reports several cases and discusses the literature of the subject. He thinks that the finding of arteriosclerosis in the uterine arteries is what should be expected in advanced life and it is not surprising that the clinical picture, pain in the hypogastrium, uterine hemorrhage, anemia and impairment in a woman 70 years of age should be mistaken for carcinoma of the uterus. He thinks that while it must be proven that it is responsible for uncontrollable uterine hemorrhage, there are many cases in which it is overlooked, as in senility; hemorrhagic metritis of the menopause may be in reality hemorrhagic infarction of the uterus based on arteriosclerosis and calcareous degeneration of the uterine vessels. So long as the condition does not rest upon a toxic basis, but rather on senile conditions, the control of the hemorrhage is all that we can expect. If the patient is dependent upon her labor for a livelihood, and the hemorrhages are taking her strength, then vaginal hysterectomy will be indicated. If it is possible for the patient to refrain from

work during hemorrhage, Findley advises rest and the use of ergot, styptics and tamponing. If, however, this is ineffective and the patient's general condition demands it, vaginal hysterectomy must be resorted to.

56.—See abstract in THE JOURNAL of January 12, p. 128.

63. **Gastroenterostomy.**—Meriwether discusses the use of the Murphy button in malignant strictures of the pylorus; even in benign strictures the trend of opinion is growing more and more favorable to the use of the button. The saving of time it offers is valuable, and since in suture operations the statistics give the same mortality the button operation should be preferred. The suture operations have usually been performed in selected cases, while the button cases have frequently been in very bad shape. The technique is given in detail. The author advises that the longer half of the button should be used in the stomach; possibly this is not in accordance with others' experience. He advises gastroenterostomy in all cases of malignant disease of the pylorus when the ordinary operation can not be done, even if the patient is weakened and the case far advanced; the Murphy button is to be used in preference to sutures as being equally as good in results and requiring much less time.

64. **Anteflexion.**—Among the causes of anteflexion aside from corsets, overstudy during the period of puberty and other things, Kingman suggests that excessive dancing and bicycle riding are important factors in many cases. The operation he seems to favor is the Dudley, which he has come to use of late with increasing frequency and great satisfaction. He also insists on the importance of cutting the posterior ligaments, which he thinks is a distinct step in advance.

65. **Appendicitis.**—After reporting a series of cases, Currier remarks that two classes in which he would think it wise to avoid surgery are: 1. Those who promise with great certainty to get well, provided they can be watched and operation performed later is necessary. 2. Those in which there is absolutely no hope. In all others operation is advisable. He does not think it well to give up drainage and irrigation where there has been much suppuration nor gauze packing in cases where hemorrhage is likely to occur, though he admits that it may do much damage in its adhesion to tissue. He is firmly convinced that it is good routine practice to open the bowels with calomel twenty-four hours after operation, unless shock is still continuous.

67. **Drum Perforation.**—Spear's article is a protest against the ordinary idea held by many, even in the profession, that perforation or rupture of the drum is necessarily serious in its consequences to hearing, etc. In certain diseases of the middle ear the intact drum is a positive hindrance to cure. While under ordinary circumstances it serves a useful purpose of protection and tends to perfect reproduction of all sounds, in some cases excellent hearing can be secured without it, and in others it is itself a hindrance to hearing, yet perforations or ruptures in it can be made with indifference and its tendency to heal is emphasized.

72. **Middle Ear Tuberculosis.**—The special features of middle ear tuberculosis, according to Bruck, are absence of pain, slight reaction on surrounding parts and its tendency to cause in a short time excessive destruction in the most cases. There are, however, cases where the progress is slower, suppuration diminished, and even spontaneous cure may take place. In some instances the cases simulate an acute purulent otitis media, but in middle ear suppuration no tubercular patient is to be considered as tubercular with absolute certainty until the bacillus can be demonstrated. The prognosis is nearly always bad; complete healing is rare. The general condition of the patient must be looked after and careful local treatment given to the ear. Boiled water douches one to two times daily, followed by loose tamponing with sterilized gauze, are advised. In cases of fetid suppuration, Bruck uses formalin solution, 4 to 6 drops to the quart of luke-warm boiled water. Where the defect in the drum membrane is great, the powder treatment may be employed, the powder containing europhen and boric acid, applied after first syringing and wiping the ear carefully, softening tough masses of secretion with carboglycerin, etc. For small granulations absolute alcohol diluted with water, using gradually less until pure alcohol can be used. Larger granulations should be cauterized. Surgical treatment should largely depend on the patient's general condition.

74. **Iodol in Treatment of Tuberculosis.**—Tyson has been using inunctions of iodol for the last two years in cases of consumption, with marked improvement in the symptoms. This was only temporary in advanced cases, though in incipient ones it continued as long as they were under observation. The cough and expectoration sometimes disappeared entirely, or in every case diminished gradually, and the abnormal breathing signs became decidedly diminished in intensity. The weight was increased, expectoration decreased, strength and appetite improved. In addition to the iodol inunctions, the patient received 1/25 gr. of strychnia three times a day, with good nourishing food and proper outdoor exercise. The inunctions contained 20 gr. to an ounce of olive-oil. The quantity rubbed in was 3i three times daily, increased gradually to 3ss, say about 3i a week, and requiring about ten minutes for the patient to rub it on.

83. **Spinal Cocainization.**—Kammerer gives his experience with spinal cocainization, in all 39 cases. Among these there were 10 unsatisfactory results, 6 in which it was impossible to obtain the cerebral fluid by puncture and 4 in which analgesia failed to appear. As regards the causes of failure in the 6 cases, there is no explanation. It is hardly possible that the needle was misdirected; there may have been some peculiar condition existing. As regards dosage, he uses, on an average, 10 or 11 drops of a 2 per cent. solution of cocain, sometimes exceeding this a little. He has seen anesthesia come late, even after thirty or forty minutes, and yet be very complete. In 4 of his cases there was more or less pronounced analgesia of the upper extremities, and in 1 it extended so far over the whole body that the lips, forehead and scalp could be pricked without pain. The patient was a strong, powerful man of 30, and only ¼ grain of cocain was employed. In the great majority, however, analgesia only extended to the ensiform process, and there were no unpleasant by-effects, excepting in a few instances. He concludes that they are more pronounced where the anesthesia is most perfect. They were not observed in the 4 where the analgesia failed. In 2 gastroenterostomies there was a certain amount of discomfort complained of on tension of the abdominal wall and manipulation of the stomach and bowel; in others there was more or less sensibility remaining. He thinks that at present we can only use the method in operations on the lower extremities and the pelvis; the higher we operate the more likely we are to have unpleasant accompaniments and defective analgesia.

85. **Aspirin.**—Toepfer has employed aspirin for its analgesic effects in acute rheumatism and other rheumatic disturbances, measles, malaria, intestinal colic, ovarialgia and other neuralgias, hemicrania, lumbago, sciatica, spinal irritation, arthritis deformans and uterine carcinoma. He finds it more or less effective in these conditions and quite satisfactory in some. It should not be employed with alkalis, like carbonate of soda. It is insoluble and must be given as a dry powder or shaken up in a cold watery mixture with neutral reaction. It is usually only a palliative. Only very rarely did he find any unpleasant effects, such as tinnitus, vertigo and headache, from its use.

87. **Rheumatic Fever in Throat Affections.**—According to Thomson and other authorities, there is a general acceptance of the view that there is an undoubted association between rheumatism and the tonsil, which is expressed from two points of view. One is that the rheumatic poison enters the system through the tonsil, the inflammation of which is the first sign of disease. The other is that tonsillitis in certain cases is one of the manifestations of the rheumatic diathesis. Both of these views are supported by observation. He thinks the various theories that have been propounded are somewhat premature. It is safer to await further pathologic investigation. We also want to know more about rheumatism itself and the

various causes and forms of tonsillitis associated with it. Thus far peritonsillar abscess or quinsy is one form which is not accepted as being rheumatic. The present state of our knowledge in relation to tonsillar affections may be summarized as follows: 1. Undoubtedly a certain number of cases of rheumatism are preceded by angina, a proportion varying from 30 to 80 per cent. Both rheumatism and angina have many etiologic points in common, seasons of wet, cold, fatigue, depression, vitiated air, etc. The connection of angina and rheumatism, though undoubted, is not yet clearly established. The tonsil may be the point of entrance of the rheumatic virus, though showing no indications of being affected. The particular affection of the throat associated with rheumatism is not clear. Peritonsillar inflammation does not seem to be arrested by antirheumatic remedies. Many cases, however, of parenchymatous and lacunar tonsillitis are considerably benefited by salicin and salicylate of soda. It does not follow that this proves the rheumatic nature of the disease. The question requires further research in two directions: 1. In differentiating the various forms of angina and settling the one which is connected with rheumatism. 2. In discovering the true nature of rheumatism itself. The relations of the pharynx and larnyx to rheumatism are also noticed.

88. **Spongyfying of Labyrinth.**—Holinger attempts to show that this condition, associated with gradually "progressive deafness," forms a clinical picture which he thinks is best impressed by the name given above. The diagnosis can be made in the living in a comparatively early stage, from history and the trio of functional tests: 1. Short or negative Rinné. 2. Increase in hearing of low sounds (A) by bone conduction. 3. A large part, one to seven octaves, of the lowest sounds can not be heard by air conduction. 4. The prognosis as to life is good: as to recovery of hearing bad. 5. The treatment must be very judicious. We can judge and compare of its effects in a given disease only when we are able to make an absolute diagnosis. The patients who have been treated from the start are often in a worse condition after years than those who have been left alone.

92.—See abstract in THE JOURNAL, XXXV, p. 1425.

102. **Spondylolisthesis.**—This condition, consisting of a sliding of the body of one of the lower lumbar vertebræ, is noticed by Lord, who describes a case which apparently followed typhoid fever. So far as he is aware this has not been before mentioned as a cause of the condition.

103. **Obliterating Hyphema.**—This term seems to Weymann the best suited to describe the condition found in the cases here reported. It applies to contusions, copious enough to obviate all view of either of the anterior chamber or the fundus. The impossibility of intraglobular inspection, puzzling surface signs and complete loss of sight, the absolute necessity of constitutional prognosis and the uniform measures of treatment until clot-absorption, make the subject worthy of some attention. He offers the following deductions: 1. Contusion of the eyeball resulting in obliterating hyphema may, or may not, be complicated with deeper lesions, but uncomplicated cases are in the minority. 2. They are apt to be followed by glaucoma, the chief cause of the suffering. 3. In the absence of infection acute iritis is rare. 4. When the contusing force at the same time secures non-infected drainage from the anterior chamber the immediate reaction, though perhaps very severe, subsides within six to twelve hours, glaucomatous tension not being able to appear. 5. The stippling of the anterior epithelium and the parenchymatous haze are due chiefly to profound shock to the local lymph system, for clouding does not disappear with the reduction of intra ocular pressure. 6. Drawing off the effused blood is neither practicable nor desirable, for it clots in a few moments, and the fibrin binds the clots closely to the iris which tend to narrow the pupil. On the other hand it shuts off the light and serves as an iris splint, but a painless subacute iritis occurs, tending to cause synechiæ. 7. Atropia should always be instilled, not only for dilatation, but on account of its analgesic effect. 8. Glaucomatous tension should be at once relieved by passing a cataract knife into the anterior chamber parallel to the plane of the iris, making a valvular wound which may be made to drain at will. 9. For the inflammation he orders calomel, 6 gr., which has an excellent revulsive effect, and compresses as hot as can be borne, for thirty minutes out of every hour for twenty-four or forty-eight hours. 10. The prognosis should be guarded until the clot absorption is complete. 11. The commonest deeper complications are: luxation of lens, consecutive cataract, iridodialysis, fundus hemorrhage and retinal detachments.

108. **Pulmonary Hemorrhage.**—The treatment of pulmonary hemorrhage, according to Robinson, may be summarized as follows: 1. Relieve the patient's anxiety; unloosen or remove clothing, and place him in a semi-recumbent position. 2. Injection of 1/4 or 1/3 gr. of morphin with 1/120 to 1/60 of atropin. 3. A teaspoonful of common salt, dry on the tongue, or 20 to 60 minims of aromatic sulphuric acid in a small quantity of water may also be given. 4. Order an ice-bag on the chest. 5. If the above fails to check hemorrhage within a short time, cord the extremities, not too tight, but sufficiently to prevent return of venous blood. 6. Under no circumstances give ergot, alum, gallic and tannic acids or any other local astringents. These have no special effect on the lung and irritate the stomach and cause constipation. 7. Insist on absolute mental and physical rest with scanty, nutritious and chiefly a fruit diet, and relieve constipation either by Epsom salts or by enemata. 8. As a prophylaxis against further hemorrhage, have the patient consume large amounts of gelatin prepared in various forms. 9. Mild collapse can be left alone. In severe collapse administer camphor hypodermically and nitroglycerin, also strychnin, not digitalis. Apply hot water bottles to the lower extremities. 10. It sometimes becomes necessary to resort to enteroclysis and large amounts of saline solution or to give the latter subcutaneously or intravenously.

112. **Gastroptosis.**—After describing the conditions, its anatomy, symptoms, etc., Chambers says that the objects sought for in the treatment are: 1. Increase of intra-abdominal tension. 2. To correct any error of secretion or motility. He frequently commences by applying strips of adhesive plaster, which gives relief until the patient is able to obtain an abdominal bandage. This should be fitted carefully so it will press firmly upon the hypogastrium. As a rule it is not needed at night. Before applying it in the morning the intestines are forced up and the bandage laced from below upward. The strength and tone of the abdominal muscles are encouraged by massage, electricity, exercise, deep breathing, etc. The medicinal and dietetic treatment varies. In hyperacidity, acids, alcohol, fruits, etc., should be strictly prohibited. The diet should be nutritious and digestible. Liberal quantities should be given at least four times a day. In severe cases a more strict diet is necessary. The drugs which he has found most useful are those which are sedative to the stomach, and assist in the digestion of starches, correct acidity and relieve constipation. Irritating cathartics should be avoided. Mixtures of bismuth carbonate, extract of cascara sagrada, tincture of belladona and two teaspoonsful of calcined magnesia two hours after meals give good results in many cases. In some cases taka-diastase is useful. A number of cases are reported.

120. **The American Cigaret.**—Seymour maintains that the cigaret deserves its bad name even though it may not be found to contain harmful foreign substances other than tobacco. The toxins of tobacco are developed by combustion and carried directly to the mouth. The material of the cigaret is often refuse tobacco from old cigar stumps, and moistened by the maker's tongue, which may be syphilitic. He concludes that the prepared cigaret is too vile for any defense.

121. **Acute Opium Poisoning.**—Bullard prefers the stomach-tube in this condition, first washing out the stomach with boiled water and then the rectum and bladder. Hypodermic injections of salt solution, he thinks, might be rational, together with bleeding and forced artificial respiration. Atropia, though a functional antidote, must be used with great caution.

and the combination of the two poisons may not improve matters. Ether, camphor, strychnin, caffein, coffee and electricity are all used. Flagellation and rough attempts at rousing the patient are objectionable.

126.—See abstract in THE JOURNAL, XXXV, ¶39, p. 1659.

127. **Asthma.**—Dunn reports cases and discusses the etiology of this disease, maintaining the opinion that it is in most cases a reflex from irritation of the nasal mucosa due to retained products of tissue metabolism. This places asthma in the same class of disorders as gout and epilepsy, the difference in the focus of irritation causing the difference in the symptoms.

129. **Perineal Lacerations.**—Brownson finds that perineal tears are often unavoidable, but perineal support is useless and often dangerous. Pressure should be applied directly to the head when it seems to be advancing too rapidly for the safety of the perineum. Pressure on the head by the whole hand and not by the finger tips, with profound anesthesia in most cases, if assistance is at hand, and then if the head can not be delivered readily, slow, gradual and careful delivery by the forceps can be done. Such measures will save at least some of the perinea from laceration.

FOREIGN.

British Medical Journal, January 26.

Summary of Researches on the Propagation of Malaria in British Central Africa. C. W. DANIELS.—Malaria prevails all through Central Africa at a height of 5000 feet near the equator, and up to at least 3200 feet at 15 degrees south latitude. It is more prevalent in some districts than in others. The estivo-autumnal is the only parasite that was found alike in Europeans, natives and Indians, with one exception, and in this case it was probably imported. The chief agent in the distribution of malaria in Central and South Africa is Anopheles funestus. Man appears to be the only intermediate host. Native children are generally infected, immunity occurring rather earlier apparently than in some other countries. The percentage of natives with enlarged spleen was decidedly marked between the ages of 2 and 4 years, while in adults this was seldom met with. As regards the prevention of malaria the author lays considerable stress on the value of drainage under proper methods. The habitual protection from mosquitoes would require irksome confinement, as the African Anopheles are less exclusively nocturnal than the Italian for example. Isolation from native settlements here may have some value, but no method is of general application to the exclusion of others. A combination of methods strictly in accordance with local conditions promises the best results. The author thinks the greatest difficulty in exterminating malaria will be to overcome the scepticism on the subject in the tropics, which he himself shared until within the last two years. We have not yet learned all the natural history of malaria-bearing mosquitoes and possibly much help may be obtained from important facts as yet unknown.

Notes on the Life History of "Anopheles Maculipennis" (Meigen). LOUIS W. SAMBON.—This paper, with its illustrations, is a valuable contribution to the natural history of malaria, giving as it does a full account of the life history, so far as known, of Anopheles maculipennis, which the author thinks is identical with the American Anopheles quadrimaculatus and the Italian Anopheles claviger. The species is, therefore, very widely distributed; it seems to have followed man in his migrations and is usually found in connection with habitations. Observations were made on the spreading habits during a recent malarial outbreak at Ostia, in which Dr. Sambon shared. He found that it does not migrate far from its breeding ground, but is often carried by coaches and railway carriages for long distances. During strong winds this species always takes shelter in thick foliage, and there is not much danger of its thus disseminating. The water collections chosen by the Anopheles are not so likely to be dried up as those chosen by the culex, but this may happen in extreme drought. They can live, moreover, in moist ground for several days, and pupæ continue to develop perfectly well even when the mud is dried up entirely. The conditions at Ostia were not favorable for experiments with larvicides. The authors think that more may be hoped from filling up and draining or stocking with fish than from other measures.

Preliminary Note on an Unclassified Type of the West African Fever. S. D. THOMPSTONE, R. A. BENNETT AND H. E. ANNETT.—The authors describe a new form of West African fever, generally ushered in by slight rise of temperature, followed by profuse perspiration, and a partial fall of temperature to about 99 degrees. After about a twenty-four hours' period of apyrexia the temperature again begins to rise, at first slowly, but when 105 is passed, with alarming rapidity. It may reach 107 on the second day. For fourteen or even thirty days there is absolutely no tendency for it to fall, the skin acts either very slightly or not at all and all antipyretic drugs fail. The tongue is at first furred on the dorsum and red on the edges, but later it becomes dry and shriveled. There is no enlargement of the liver and spleen. The bowels are regular or loose. The conjunctivæ are injected and pupils contracted. The mind remains reasonably clear in most cases, excepting at the highest temperature; great anxiety and restlessness are constant symptoms in the earliest stages. No plasmodia or pigmented leucocytes have been found in the blood. In two of the later cases the blood tended to coagulate the moment it was exposed to air, and satisfactory films were hard to obtain. The treatment of the condition is summed up in one word—baths. The cold bath is used until the temperature is brought down to 100 or 99 degrees. The patient usually sleeps for about an hour and then feels fairly comfortable, but the temperature usually tends to creep up, and in eighteen or twenty-four hours it is back to its old point. It was found, in one patient who recovered, that after the cold bath the temperature could be kept down by cold packs renewed at hourly intervals. If the patient is to recover, some change for the better is to be looked for at the end of the third week, the temperature falling and keeping down to a certain extent. Convalescence is gradual, and it may be six weeks after the onset before it becomes normal again. About 50 per cent. of the cases terminated fatally. In the addendum to the paper, by Dr. Annett, it is stated that examination of the blood gave nearly the normal number of red corpuscles, over 4,000,000, and there were 15,000 white, with 90 per cent. hemoglobin. No micro-organisms were cultivated. The disorder occurs during the dry season, when malaria is less prevalent. The onset, symptoms and course of the disease are atypical to malaria; no rigors or shivering, hot or cold stages, vomiting or enlarged spleen. The continued hyperpyrexia is characteristic, continuing over a long period, and then gradually declines. The resistance to drugs, absence of hemamebæ and pigmented leucocytes, the especial tendency of the blood to coagulation and its richness in red corpuscles and hemoglobin are also notable characteristics.

The Lancet, January 26.

Suggested Method of Preventing Water-Borne Enteric Fever Amongst Armies in the Field. LOUIS C. PARKES AND SAMUEL RIDEAL.—The authors give the results of experiments for destroying the water-borne germ of enteric fever, and the remedy which they seem to find most effective is acid bisulphate of sodium, of which it was found that 1 gram will render a pint of water sterile in fifteen minutes, even if the water contains as many as 50,000 colonies of typhoid bacilli to the centimeter. They recommend the use of it in 5 gr. tabloids, put up in boxes containing about 350, enough to sterilize 100 pints of water. One of these boxes should be carried by every soldier, in his haversack, and supposing him to consume five pints a day, the box would last for three weeks. Instructions should be given by the medical officer to the rank and file, as to the use of the tabloid, especially as to the desirability of allowing it to remain for at least fifteen minutes in solution before the water is consumed. The bacillus typhosus is not by any means resistant to such acids. By this simple means the combating of infection has a future before it, especially under conditions where means of sterilizing by boiling and filtering are not readily available.

Gazette Med. Belge (Liege), January 17.

Technique of Cryoscopy. BIENFAIT.—About 15 c.c. of the serum or other fluid to be examined are placed in a large test-tube, which is set in a vessel containing salt and chopped ice. The temperature falls to two or three degrees below the freezing point, but the fluid does not freeze—there seems to be a sort of supersaturation by the cold. A minute piece of ice is then dropped into the fluid and at once it freezes solid. The temperature rises to .55 C., where it remains as the normal freezing-point of the serum of the blood. [Waldvogel attributes the higher freezing point for blood serum which he observed in typhoid fever, to the presence in the blood of the typhic antitoxin, mentioned in THE JOURNAL, Dec. 22, 1900, p. 1667. He consequently assumes that when the freezing-point is only slightly above normal, it demonstrates a defective production of the antitoxin and an unfavorable prognosis. ED.]

Presse Medicale (Paris), January 9, 12 and 16.

Importance of Zymases in Infant Feeding. A. B. MARFAN.—The presence of a zymase in human milk has been established, and Marfan has also found a lipase and an anaero-oxydase. He believes that milk is not an inert fluid, but that it partakes of some of the properties of the tissues. It is possible that the ferments in it have a stimulating and regulating action on the nutrition until the organism has developed sufficiently to supply its own stimulating and regulating substances. Each kind of milk has probably its special ferments, and it may be a mistake to destroy them in sterilizing the milk. The aim in artificial feeding, therefore, should be to add to sterilized cow's milk the zymases peculiar to human milk.

Tests for Sugar in Children.—P. NOBECOURT.—Very little information in respect to the functional activity of the intestinal mucosa can be derived from alimentary lactosuria and saccharosuria in children. Alimentary glycosuria, on the contrary, may afford considerable insight into the functional capacity of the liver and tissues. The childish organism in physiologic conditions is able to fix large amounts of glucose—as much as 5.9 gm. per kilogram in some cases.

Revue De Chirurgie (Paris), January.

Ectokelostomy for Hernia. J. VITRAC.—In operating for inguinal hernia, for instance, an incision is made in the abdominal wall above and the mobilized hernia sac is drawn up and out through this second incision. It is then trimmed close to the skin and fastened provisionally. The hernial wound is then sutured and a drain inserted in the marsupialized sac above. When this is removed in a few days the secondary wound is sutured. The chief advantages of this method are its simplicity, rapidity, freedom from danger to the viscera and the possibility of dispensing with general narcosis. The results were most satisfactory in the two cases in which Vitrac has applied it. One patient did not require even local anesthesia.

Obturator Hernia. P. FREDET.—Obturator hernia with a double sac has been noted, the external sac formed of the prevesical fascia. The hernial sac may be arrested in its downward course by a branch of the obturator nerve and may cause pain and symptoms of paralysis by traction on this nerve. These symptoms vanish as the sac emerges from the foramen and leaves the nerve behind it. In some cases the nerve offers such resistance that the hernial sac is diverted from its direct course and lodges behind the external obturator muscle.

Progres Med. (Paris), January 5, 12 and 19.

Latent Epilepsy. ARDIN-DELTEUIL.—This article is concluded from Nos. 50 and 52. It states that the etiology, evolution and prognosis of the latent forms of epilepsy are the same as for the ordinary form, and may blend with the latter. The final dementia even seems hastened in psychic epilepsy, as the thought-cells are used up more rapidly. The prognosis is, therefore, exceptionally grave from this point of view; the mind of the patient is threatened and confinement will become necessary sooner or later. It is also grave from the point of view of society on account of misdemeanors and deeds of violence which may result. Suspicion should be aroused by any motor, sensory, vasomotor, nervous or psychic manifestations of stereotyped reproduction and photographic repetition, sudden, brief, and followed by depression, stupor and forgetfulness. In regard to the psychic phenomena, the violence, publicity, ferocity, marked readiness to take offense and cherish stubborn animosity, are distinctive characteristics. Besides investigating the personal and hereditary record, the toxicity of the urine should be determined as the urine in even the latent forms of epilepsy is usually remarkably hypotoxic in the intervals between the seizures. It should also be examined immediately after an attack, for increased urea and phosphates with a tendency to inversion of the formula. The temperature also, after the latent seizure, will show a slight elevation, with return to normal in a few hours. Mydriasis may also be observed during the seizure with myosis at the end. When latent epilepsy is determined, a medical certificate to that effect should be given the patient, which he should always carry. In regard to the criminal responsibility, the subject is absolutely irresponsible during a seizure, whatever its character and the amnesia, and comparatively irresponsible just before and just after one, according as the pre-epileptic and post-epileptic stage are more or less pathologic. In the intervals there is complete responsibility if the mental faculties are still sound; attenuated if the subject exhibits tokens of the epileptic character. If the mental faculties are affected, the irresponsibility is complete. The degree of responsibility should not be determined from the apparent preservation of the conscience during the psychic paroxysm. Still less is it possible to accept as a criterion of the retention of conscience, the more or less complete retention of memory.

January 19.

Anomaly in the Frontal Sinuses. SUAREZ DE MENDOZA.—In the case of a patient operated on for double frontal sinusitis, the inflammation recurred and two supplementary sinuses were found, separated by a thin partition from the true sinuses, but each with its separate passage into the nose. Mendoza has found a similar anomaly on two cadavers. Anger has mentioned this anomaly and Beco has recently reported a similar case.

Calcium Chlorid in Hemorrhagic Variola. ROGER.—This article calls attention to the marked benefit derived from the use of calcium chlorid in many cases of hemorrhagic variola. Roger administers it in the following formula: crystallized calcium chlorid, 4 to 6 gm.; syrup of bitter orange peel, 40 gm.; brandy or rum, 30 gm.; tincture of cinnamon, 5 gm.; aq. dest., 50 gm. A tablespoonful is given every hour, supplemented by local hemostatic applications, gelatin, etc. If the hemorrhage is from the intestines they should be flushed with salt solution containing tannin or extract of rhatany.

Centralblatt f. Chir. (Leipsic), January 26.

Substitute for Gastroenterostomy. M. SCHMIDT.—In case of circumscribed stenosis or spasm of the pylorus, Schmidt suggests, after severing the duodenum from the pylorus, to insert the stump of the duodenum in the stomach, below the closed stump of the pylorus, and suture it to the posterior wall, "end-to-side," maintaining in this way the natural course of the passage, merely moving it a little farther down and farther inside the stomach.

Deutsche Med. Wochenschrift (Leipsic), January 24.

Instruction in the History of Medicine. E. BRAATZ.—Virchow wrote thirty years ago that the scientific knowledge of young physicians reaches only three to five years back, and this is equally true of the present generation. The history of medicine was taught as a regular branch in fifteen German-speaking universities, a few years ago, but it is kept up now in only two or three. Nevertheless the medical graduate needs the story of the past in order to appreciate the present, to uphold the traditions in professional ethics, and for many other reasons. Braatz pleads that this instruction should not be neglected, and also that more attention should be paid to the things necessary in general practice.

New Form of Hemoglobinuria. L. MICHAELIS.—In case of extrauterine pregnancy terminating in abortion through the

abdominal ostium of the tube, and extensive hemorrhage into the abdominal cavity with severe clinical symptoms, no blood was evacuated through the vagina, and a small retro-uterine hematocele was the only palpable lesion. The patient rapidly recovered. During the absorption of the accumulation of blood, pronounced hemoglobinuria was present on two occasions, once for two and again for four days. Michaelis suggests that possibly the hemoglobin in the extravasated blood was absorbed unaltered into the blood and eliminated through the kidneys, but this phenomenon has never been observed before and is scarcely probable. Still more plausible, he thinks, is the assumption of the formation of a hemolysin by the rapid absorption of the extravasated blood. This hemolysin in turn acted on the blood corpuscles, dissolving them and inducing the hemoglobinemia and hemoglobinuria noted in the case. The formation of the autolysin is followed by the production of an antiautolysin, as Ehrlich has established, but the latter does not keep pace with the former at first, and more or less hemolysis occurs before the latter is able to counteract the action of the autolysin.

Muenchener Med. Woch., January 8, 15 and 22.

Test for Indican in Urine Containing Iodin. A. KUEHN.—In testing urine for indican, the presence of iodin disturbs the reaction to the test. Kuehn announces that even one drop of a 5 per 1000 solution of sodium thiosulphate will combine the iodin in urine containing 1 per 1000 indican, into a colorless sodium compound.

Atavistic Deformities. G KLEIN.—In this preliminary communication Klein mentions, as examples of deformities in the female genitalia, which are merely a return to atavistic conditions, uterus bipartitus and double vagina and tubes. Opossums have normally a double uterus, double vagina and double tubes. In the hen, only one of Mueller's ducts develops; the other atrophies, in normal conditions.

January 15.

Subcutaneous Laceration of the Spleen. JORDAN.—A case of traumatic, isolated laceration of the spleen is described, the patient, a young officer, who was thrown from his horse and fell on the hilt of his saber. The immediate pain was intense, but there was not much shock. Symptoms of inflammation of the peritoneum followed, and, later, of internal hemorrhage. The pain was localized in the liver region and there was also an area of dulness on the right as well as the left side. But the dulness of the spleen did not change with altered position, and consequently a liver lesion could be excluded. The abdominal wall was retracted and hard. A tear of the mesentery or omentum seldom entails such rapid and profuse hemorrhage as laceration of the spleen. The dulness over the liver, in addition to that in the left flank, indicated hemorrhage, as there is no area of dulness over the liver in case of isolated perforation of the intestine. Vincent could find only six spontaneous recoveries, with 134 deaths from more or less extensive laceration of the spleen. Lewerenz, however, has collected 15 spontaneous recoveries in 135 cases in which the injury to the spleen was the predominant or only serious trauma (*Langenbeck's Archiv* lx, 1900), 16 were saved by extirpation of the organ. The remaining 104 all died; no attempt at surgical intervention was made in 90 cases. Death occurred in less than twenty-four hours in 85 per cent., and in two or three days in 10 per cent., invariably from the hemorrhage or its consequences. The absence of anatomic confirmation of the spontaneous recoveries renders some of them doubtful. These statistics proclaim the necessity of immediate operation to arrest the hemorrhage. The operation of splenectomy has been performed in more than 300 cases besides innumerable experiments on animals, and there is not a single instance known to date in which the extirpation of the organ was in itself the cause of death. On the contrary, even when the blood-producing organs are taxed as after the extensive hemorrhage, the composition of the blood returns to normal in a few weeks or months. In Jordan's personal case the spleen was promptly removed, and two liters of blood were evacuated from the peritoneal cavity. Meteorism, vomiting and atony of the intestines ensued, probably the results of the contusion. Symptoms of circumscribed peritonitis in the vicinity of the stump of the spleen were also observed. Notwithstanding these complications, the patient had completely recovered his health in four months, with the exception of an occasional twinge of pain in the region, possibly caused by some adhesion. Nothing occurred during the entire course of the case which suggested a vicarious activity on the part of any other blood-producing organ. [In Savor's case, described in THE JOURNAL XXXII, p. 188, the removal of the spleen did not seem to have an unfavorable influence on the pregnant patient nor on the child delivered normally later. Riegner has recently reported that the patient whose spleen he removed eight years and nine months before, is in good health to date. This was the first case of extirpation of the spleen on account of rupture.—ED.]

January 22.

Hereditary Transmission of Tuberculosis. E. KLEBS.—The transmission of tuberculosis from a tuberculous father is ten times more dangerous for the offspring than from a tuberculous mother. Klebs bases this assertion on his experience and observation, particularly in Switzerland, where there is less shifting of population than in most countries. He tabulates the pathologic tree of two families with 55 descendants in five and six generations. It shows that when both parents were tuberculous, all the children became affected; that 46 per cent. became tuberculous when the father was infected, and that in twenty cases healthy children were raised by tuberculous mothers while only two healthy ones were born to tuberculous fathers. He remarks that if a life insurance company had insured these families—excluding children with tuberculous mothers and accepting those with infected fathers—it would have lost by the transaction. Tubercular peritonitis or nephritis was usually the first manifestation of infection in the children of tuberculous fathers, while the lungs and cervical ganglia were usually primarily affected in the children of infected mothers. The route of the infection in the latter case is probably through the lymphatic gland situated behind the sternoclavicular articulation, as Grober has established that stains injected into the tonsils pass not only into the cervical lymphatics, but also into the pleura and the apex of the lung. Tubercular infection of the apex is probably derived in many, if not in most, cases from infected glands in the neck and not from inhalation into the lungs. The percentage of descendants in the two families who died early or childless was 71.8. Only 28.2 per cent. had more than one child, and many of these were tuberculous.

Alcohol Vapor for Disinfection. G. FRANK.—Anthrax spores exposed, between sheets of filtering paper, to the vapor of boiling 40 per cent. alcohol were invariably killed in five minutes in Frank's numerous tests. Steam alone and alcohol vapor alone are ineffectual. The bactericidal power is due to the combination of 90 per cent. alcohol and 12 per cent. water which pass off in the steam and vapor when 40 per cent. alcohol is boiled.

Condition of the Blood-Forming Organs in Anemia. C. S. ENGEL.—As the results of his researches, Engel concludes that it is possible to determine the condition of the bone-marrow in anemia from examination of the blood. He distinguishes four phases of the marrow: "normal, insufficient, metaplastic and aplastic." The normal red bone-marrow in the epiphyses contains orthochromatic and polychromatic normoblasts. The blood shows only one kind of red corpuscle, normal orthochromatic erythrocytes. In case of "insufficient" bone-marrow, the size and shape of the red corpuscles are the same as in normal conditions, but sometimes the nucleated reds in the bone-marrow are increased, as in case of pernicious anemia, in which metaplastic cells are observed in the marrow. The blood may be characteristic of chlorosis or of anemia, or pathologic reds may pass into the blood, normal in size, but such as remain in the marrow under normal conditions, orthochromatic and polychromatic normoblasts and polychromatic erythrocytes. In metaplastic marrow the yellow portion is entirely or partially red. Megaloblasts and metrocytes are found in the marrow, such as are noted in the earliest em-

bryonal stages in the blood of the heart and liver, before any bone-marrow has developed. The cells of metaplastic bone-marrow are therefore identical with the blood cells of the premedullary period of blood formation, and show all the transitions from normal size to pathologically large red corpuscles with and without a nucleus. Megaloblasts are found frequently and macrocytes regularly in the blood. In the rare condition which he calls "aplastic" bone-marrow, no nucleated reds nor leucocytes are found. The red marrow of the epiphyses has become transformed into fatty marrow and ceases to be a hematopoietic organ. No pathologic cells are found in the blood; the normal red corpuscles diminish without being substituted by others. Even granulated leucocytes are absent. Engel urges, in conclusion, microscopic examination of the red marrow at every autopsy as a routine measure.

Evacuation of Abscesses in Retrovesical Pouch Through a Parasacral Incision. K. PORT.—Rotter recommends the rectal route for opening abscesses in the rectovesical pouch, but Port is convinced that a much simpler and safer way is that described by C. Koch (*Muench. Med. Woch.*, 1899, 1.) He had occasion to perform this operation recently and found it extremely satisfactory. The broad, funnel-shaped, parasacral opening afforded ample view of the conditions in the region. The incision was carried around the left of the anus to the apex of the coccyx and along its left margin. The coccyx was then turned back. The dressings were changed with the patient in the knee-elbow position. The abscess was consecutive to appendicitis, and after a necrotic fragment of tissue, possibly the appendix, had been expelled the wound rapidly healed. There was considerable pain during the first day or so from the luxated coccyx, but it soon subsided. As the pus has such a free outlet there is no fear of infiltration of adjacent tissues.

Perforation of Hydatid Cysts Into Lungs. S. ZERVOS.—In six cases of hydatid cysts perforating into the lungs, Zervos found the cysts in the upper surface of the liver. The French method of treating hydatid cysts by capitonage is not only ineffectual, but it exposes the patient to the greatest dangers. The cysts form again and as the hermetic suturing of the liver prevents them from developing forward and downward, they can only grow upward. This, in time, leads to perforation into the lung and death from immediate asphyxia or from pneumonia later.

Grece Medicale (Syra), December.

Malaria and Antirabic Treatment. PAMPOUKIS.—At the Pasteur Institute in Athens it has been noted that a malarial chill and fever frequently follow the antirabic injection in patients who have previously suffered from malaria, but have had no attacks for a year or more.

Hematoblasts in the Omentum. MELISSINOS.—Hematoblasts such as are found in the other blood-producing organs have been discovered by Melissinos in the great omentum of cats, dogs, pigs and man during the embryonal stage. They are most numerous in that portion of the omentum between the spleen and the greater curvature. The great omentum and the spleen are both derived from the posterior mesogastrium, and as similar hematoblasts are found in each, this fact may throw some light on the origin of hematoblasts in general.

Gazetta Degli Ospedali (Milan), January 6, 13 and 20.

Physiology of the Cerebrospinal Fluid. CAVAZZANI.—The alkalinity of the cerebrospinal fluid was less than half that of the blood in a series of tests on dogs and cattle. The animals were under the influence of curare or morphin in some of the tests; in others the fluid was aspirated through the atlanto-occipital membrane or obtained post-mortem, and in another series of experiments, acids and alkalies were injected. The results all tend to demonstrate the existence in the nerve-centers of an acid substance resulting from their functional activity. Cavazzani also announces that he has succeeded in precipitating a substance from the cerebrospinal fluid which behaves like a ferment, an oxydase. Further researches indicated that the variations in pressure are due to the venous circulation. He noticed that at the commencement of asphyxia the pressure was diminished and the fluid ceased to flow from the fistula, followed soon by an increased flow. He also observed that the flow subsided in dogs on stimulation of the central stump of the vago-sympathetic nerve.

January 13.

Regeneration of Nerve Fibers. A STEFANI.—This work won the prize offered by the Royal Institute of Lombardy. The researches therein detailed confirm the assumption that nerve fibers possess the property of maintaining the isolation of the central stumps as long as they remain normal. On the other hand, if one of the fibers or of the disconnected centers is in course of degeneration, union between the fibers may occur. The facts observed corroborate the conception of the neuron as an elementary organism with the property of keeping itself distinct from all other elementary organisms of the same species and of regenerating a lost part.

January 20.

Surgical Intervention in Bubonic Plague. BANDI.—The benefits of excising the buboes in oriental plague were proclaimed by Terni during his experiences in Brazil. Bandi has been conducting a long series of experiments in this line at Messina, and announces that the results completely confirm Terni's statements. He considers bubonic plague essentially and exclusively an affection of the lymphatic system. The bacillus settles in the gland first invaded and remains there for a time. Before the suppurative stage has been reached the bacilli start on their invading progress, passing into adjacent glands, but without penetrating the capsular filter of the glands. The infection in his experiments always proceeded to the superficial glands before invading those that lay deeper. Prompt, aggressive extirpation of the primary foci is indicated. The bacilli do not pass into the blood except as a septicemic process in extremely severe cases, or when the resistance of the organism has been overcome. Salomoni states that he has removed tumefied glands as a local curative and general prophylactic measure in tuberculosis. He has systematically removed all the inguino-crural and pelvic glands in fourteen cases. He has also proved on the cadaver the feasibility of the enucleation of the peribronchial lymphatic glands.

Klinitchesky Journal (Moscow), November.

Two Cases of Cortical Epilepsy Treated by Operation. M. A. LUNTZ.—Both of the patients were women, one a cook, 53, and the other 22 years of age. There was no history nor indication of syphilis or trauma in either case; the typical cortical epilepsy was recent and the absence of general symptoms and other signs excluded the idea of a tumor. The epilepsy in the older woman had commenced after a very severe cold which had left great weakness; the seizures recurred at intervals of two or three weeks and sometimes for two or three days in succession. Luntz was able to diagnose positively the site of the lesion in the upper part of the central convolutions, but the alterations found at the spot were comparatively insignificant, merely a thickening of the dura mater and slight adhesions between the membranes, bone and brain. The lesion was evidently, he considers, a relic of an organic process, in all probability tubercular. Although none of the organs showed tubercular involvement, the patient had had, twenty-eight years before, an obstinate suppurating lesion in the left shoulder, which persisted for five years and left a deep defect. After craniectomy, in July, 1899, the slight paresis of the lower extremity persisted unchanged, but the seizures did not recur during the three months the patient was under observation. In the second case the operation proved a failure, as the seizures were uninfluenced. The lesion in this case was located in the lower and partly in the middle parts of the central convolutions. In the review of the current Russian periodicals, which is a new feature of this journal, another case of cortical epilepsy is described by Vassilieff, of fifteen years' standing, the epileptic and later the paralytic symptoms being limited to the left side. The patient died of intercurrent pneumonia, and a dark-red focus the size of a pea was found in the depths of the right fissure of Rolando. During the epileptic seizures in this case, the patient invariably lost consciousness if he were turned on his back.

Change of Address.

E. S. Alexander, 6424 Lowe St., to 267 S. Hermitage Ave., Chicago.
Jos L. Bell, Richmond, Ind., to A. A. Surg., U. S. A., Fort Crook, Omaha, Neb.
E. Bates, 18 W. Orange, to 209 N. Prince St., Lancaster, Pa.
R. H. Born, Montoursville, Pa., to Wichita, Kan.
H. W. Copeland, 191 S. Pryor, to 46 Houston St., Atlanta, Ga.
L. DeChesne, Sawyer, to Sturgeon Bay, Wis.
H. H. Dally, 746 Jackson Boul., to 348 Ogden Ave., Flat K, Chicago.
J. C. Egelston, New Ridge Bldg., to City Hospital, Kansas City, Mo.
M. L. Hill, Memphis, Tenn., to Paris, Miss.
F. C. Keck, 508 Montgomery, to 1415 Castro St., San Francisco, Cal.
D. B. Lanting, 663, to 628 W. Congress St., Chicago.
F. B. Ling, 474 Ogden Ave., to 633 Van Buren St., Chicago.
F. J. Leavitt, 742 W. Adams St., to 736 Jackson Boul., Chicago.
Chas. Lucas, Shelton, to Glenville, Neb.
F. H. May, Huntsville, to Birmingham, Ala.
H. M. Manning, U. S. Jail, to Wash. Asyl. Hospt., Washington, D. C.
C. W. McCarty, Scottsville, to Portis, Kan.
H. T. Marshall, Johns Hopkins Hospt., to 213 W. Lonvale St., Baltimore, Md.
M. Popper, 3413 Laclede Ave., to Mermod & Jaccard Bldg., St. Louis, Mo.
H. E. Prather, 210 E. Chestnut, to 605 W. Broadway St., Louisville, Ky.
J. M. Parrington, Durango, Colo., to Emporia, Kan.
R. C. Payment, 1011 Grand River Ave., to 961 12th St., Detroit, Mich.
H. F. Patten, Nashville, Tenn., to 265 Conover St., Dayton, Ohio.
J. J. Ratcliffe, Waukon, to Spillville, Iowa.
S. Rothenberg, 639 W. 8th, to 22 W. 7th St., Cincinnati, Ohio.
R. Russell, Sunbright, to Box 853, Knoxville, Tenn.
Bryant Smith, 136 Wisconsin St., to 6 Prospect Ave., Milwaukee, Wis.
W. F. Seymour, Chicago, to Tengchowfoo, Shantung Prov., via Chefoo, China.
W. F. Sihler, Grand Harbor, to Devil's Lake, N. D.
J. O. Strickland, Atlanta, to Stilson, Ga.
C. H. Stoddard, 1201 State, to 1201 Vliet St., Milwaukee, Wis.
W. E. Shook, 740 Jackson Boul., to 588 Congress St., Chicago.
S. L. Stevens, 722 Jackson Boul., to 212 S. Lincoln St., Chicago.
R. B. Sweet, 775 Polk St., to 119 Seeley Ave., Chicago.
N. M. Spradley, Selvin, to Tennyson, Ind.
Percy Shields, 22 W 7th St., to 5 Garfield Pl., Cincinnati, Ohio.
W. D. Shields, Holdrege, to Insane Hospt., Lincoln, Neb.
A. L. Sherman, Hudson St. Hospt., to New York Hospt., New York City.
R. T. Strange, Memphis, Tenn., to Vandervoort, Ark.
E. J. Thayer, Yoakum, Tex., to 1645 Welton St., Denver, Colo.
N. K. Vance, Baton Rouge, to Shreveport, La.
J. M. Womeldorf, Hartley, to Schleswig, Iowa.
John Wehrly, St. Louis, Mo., to San Bernardino, Cal.

The Public Service.

Army Changes.

Movements of Army Medical Officers under orders from the Adjutant-General's Office, Washington, D. C., Jan. 24, to 30, 1901, inclusive:

Dallas Bache, colonel, asst.-surgeon-general U. S. A., president of a promotion board convened at the War Department, Washington, D. C.

Joseph L. Bell, acting asst.-surgeon, from Richmond, Ind., to duty at Fort Crook, Neb.

W. Fitzhugh Carter, major and surgeon, U. S. A., member of a board at Fort Totten, N. Y., to examine officers of the corps of engineers for promotion.

William D. Crosby, captain and asst.-surgeon, U. S. A., member of a board in New York City, to examine officers of the Ordnance Department.

Lawrence A. Felder, acting asst.-surgeon, member of a board at Mobile, Ala., to examine officers of the corps of engineers.

Alfred C. Girard, lieut.-col., deputy surgeon-general, U. S. A., member of a board at San Francisco, Cal., to examine officers of the corps of engineers.

Louis T. Hess, lieutenant and asst.-surgeon, U. S. A., now on temporary duty at the general hospital, Presidio of San Francisco, Cal., is relieved from further duty in the Division of the Philippines.

John Van R. Hoff, major and surgeon, U. S. A., member of a promotion board at the War Department, relieving Colonel Dallas Bache, asst.-surgeon-general.

Deane C. Howard, captain and asst.-surgeon, U. S. A., former orders from Fort Hancock, N. J., to the Division of the Philippines revoked.

Henry S. Kilbourne, major and surgeon, U. S. A., member of a board in New York City, to examine officers of the Ordnance Department.

Thomas J. Kirkpatrick, captain and asst.-surgeon, U. S. A., member of a board at Mobile, Ala., to examine officers of the corps of engineers.

Louis A. LaGarde, major and surgeon, U. S. A., member of a promotion board at the War Department, relieving Lieut.-Col. Charles Smart, deputy surgeon-general.

William C. LeCompte, acting asst.-surgeon, from Washington, D. C., to duty at Fort Du Pont, Del.

Thomas K. Mullins, acting asst.-surgeon, leave of absence granted.

George Newlove, acting asst.-surgeon, former orders modified so as to assign him to temporary duty at Fort Sill, Okla.

Robert M. O'Reilly, lieut.-col., deputy surgeon-general, U. S. A., member of a board at Fort Monroe, Va., to examine officers of the army.

Adrian S. Polhemus, captain and asst.-surgeon, U. S. A., now on duty at Fort Leavenworth, Kan., to proceed to Fort Riley, Kan., for temporary duty, and as a member of a promotion board.

Benjamin F. Pope, lieut.-col., deputy surgeon-general U. S. A., member of a board at San Francisco Cal., to examine officers of the corps of engineers for promotion.

Irving W. Rand, captain and asst.-surgeon, U. S. A., former orders assigning him to Fort Hancock, N. J., from the Division of the Philippines revoked.

Charles Smart, lieut.-col., deputy surgeon-general, U. S. A., member of a promotion board at the War Department, Washington, D. C.

James K. Stockard, acting asst.-surgeon, now in San Francisco, Cal., is assigned to duty in the Department of California.

Blair D. Taylor, major and surgeon, U. S. A., member of a board at Honolulu, H. I., to examine candidates for admission into the U. S. Military Academy, West Point, N. Y.

Adrian D. Williams, acting asst.-surgeon, from Brooklyn, N. Y., to temporary duty at Fort Adams, R. I.

Roy A. Wilson, acting asst.-surgeon, member of a board at Fort Totten, N. Y., to examine officers of the corps of engineers for promotion.

Navy Changes.

Changes in the Medical Corps of the navy for the week ending Feb. 2, 1901:

Medical Inspector W. A. McClurg, commissioned medical inspector, Nov. 19, 1900:

Asst.-Surgeon H. C. Shiffert, ordered to the *Franklin*.

Asst.-Surgeon E. J. Grow, detached from the *Culgoa*, and ordered to the *Glacier*, and also to duty at Olongape, P. I.

Pharmacist J. Cowan, detached from the *Culgoa*, and ordered to the *Glacier*, and also to duty at the Naval Hospital, Cavite.

P. A. Surgeon M. R. Pigott, died at Annapolis, Md., January 31, 1901.

Marine-Hospital Changes.

Official list of the changes of station and duties of commissioned and non-commissioner officers of the U. S. Marine-Hospital Service for the seven days ended Jan. 31, 1901:

Surgeon W. P. McIntosh, to proceed to Jeffersonville, Ga., for special temporary duty, Jan. 30, 1901.

Surgeon T. B. Perry, granted leave of absence for thirty days from Feb. 11.

Asst.-Surgeon John McMullen, upon expiration of leave of absence, to proceed to Wilmington, N. C., and assume temporary command of the service during the absence of Surgeon T. B. Perry.

Asst.-Surgeon G. M. Corput, to proceed to Cleveland, Ohio, and assume temporary command of the service during the absence of Surgeon W. J. Pettus.

BOARD CONVENED.

Board convened to meet at Washington, D. C., on Tuesday, Feb. 5, 1901, for the physical examination of Second Asst.-Engineer R. F. Halpin, R. C. S. Detail for the board—Surgeon Preston H. Bailhache, Chairman; Surgeon G. T. Vaughan, and Asst.-Surgeon B. S. Warren, Recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon-General, U. S. Marine-Hospital Service, during the week ended Feb. 2, 1901:

SMALLPOX—UNITED STATES.

District of Columbia: Washington, Jan. 19-26, 2 cases
Florida: Jacksonville, Jan. 12-26, 10 cases.
Illinois: Chicago, Jan. 19-26, 25 cases, 1 death.
Indiana: Michigan City, Jan. 20-27, 1 case.
Kansas: Wichita, Jan. 19-26, 9 cases.
Kentucky: Lexington, Jan. 19-26, 2 cases.
Louisiana: Jan. 19-26, Shreveport, 5 cases; New Orleans, 11 cases, 3 deaths.
Maryland: Baltimore, Jan. 19-26, 1 case.
Pennsylvania: Jan. 19-26, Erie, 1 case; Pittsburg, 2 cases.
Tennessee: Jan. 19-26, Memphis, 8 cases; Nashville, 4 cases.
Texas: Houston, Jan. 19-26, 44 cases, 1 death.
Utah: Salt Lake City, Jan. 19-26, 31 cases.
Wisconsin: Milwaukee, Jan. 19-26, 1 case.

SMALLPOX—FOREIGN.

Belgium: Antwerp, Dec. 29-Jan. 5, 1 case.
Brazil: Pernambuco, Nov. 15-30, 30 deaths.
China: Hongkong, Dec. 8-15, 1 case.
Egypt: Alexandria, Dec. 24-31, 2 cases, 1 death.
England: Jan. 5-12, London, 1 case; Newcastle, on Tyne, 2 cases.
France: Paris, Jan. 5-12, 11 deaths.
India: Bombay, Dec. 24-Jan. 1, 4 deaths.
Mexico: Mexico, Jan. 13-20, 1 case; Tuxpan, Jan. 14-21, 1 death; Vera Cruz, Jan. 6-13, 3 cases.
Russia: Moscow, Dec. 22-Jan. 5, 9 cases, 4 deaths; Odessa, Dec. 22-Jan. 12, 137 cases, 24 deaths; St. Petersburg, Dec. 22-Jan. 5, 6 cases 2 deaths; Warsaw, Dec. 22-Jan. 5, 23 deaths.
Scotland: Glasgow, Jan. 11-18, 121 cases, 2 deaths.

YELLOW FEVER.

Cuba: Havana, Jan. 12-19, 2 deaths.
Mexico: Vera Cruz, Jan. 6-20, 5 cases.

CHOLERA.

India: Bombay, Dec. 24-Jan. 1, 2 deaths.
Straits Settlements: Singapore, Nov. 16-27, 36 cases, 36 deaths.

PLAGUE.

India: Bombay, Dec. 24-Jan. 1, 154 deaths.
Turkey: Constantinople, Jan. 7, 1 death.